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MEDICAL REVIEW:

A QUARTERLY JOURNAL
OF
THE MEDICAL SCIENCES.

JANUARY, 1881.

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THE

BIRMINGHAM MEDICAL REVIEW.

JANUARY, 1881.

REVIEWS.

MEDICAL ELECTRICITY.*

NO department of medical science has been prosecuted with more energy, during the last few years, than that of Medical Electricity. The great advance in this science has been due to Onimus, Erb, and other distinguished neurologists, and while the addition to our knowledge of the treatment and diagnosis of nervous diseases has been very great, a still greater encouragement to further research is held out by the results of their work. Very opportune, therefore, have been the publication of Dr. A. Hughes Bennett's lectures in the British Medical Journal, and Mr. de Watteville's "Practical Introduction to Medical Electricity."

The latter, by stating plainly the principles of electricity, and the mode of its application in disease, and the former by formulating our knowledge of electricity in its physiological and pathological relations, have furnished a sound and valuable basis for further investigation.

Like heat and light, electricity has by modern science been demonstrated to be a form of molecular motion, and its phenomena may be realised by a comparison with those of a current of water. Like such a current it may be continuous, or intermittent, and its course is always in the direction of least resistance between two points. Such least resistance depends upon difference of level, and in electricity difference of level is called difference of potential.

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* "A Practical Introduction to Medical Electricity." By A. de Watteville, M.A., B.Sc. London : H. K. Lewis.

"Lectures on Nervous Diseases" By Dr. A. Hughes Bennett. British Medical Journal, 1879-80.

As in hydrostatics we take the sea level as a standard level for comparison, so in electricity we take for our standard the potential of the earth, assuming the earth to be in a state of electrical rest, and define the potential of a body as the excess or defect of its potential above or below that of the earth. The one state of excess we call "positive potential," and the other of defect, "negative potential," and imply that if a point at a positive potential be connected with the earth, the electrical current will be from it to the earth, and conversely from the earth to a point at a negative potential: again, points may relatively to each other be positive and negative, though both may be above or below, that is, both positive or ^ negative with reference to the earth's potential. ^ bot

A galvanic cell, or any electrical machine, is an arrangement for producing a difference of potential between two points, and this it does by means of an unknown force, to which the name of electro-motive force has been given. This difference of potential is exhibited at the poles, and is a measure of the electro-motive force of the given cell.

The electro-motive force of a cell depends upon the nature of its constituents, not on the size, and varies with any change in these. Suppose the two poles of a cell to be connected by means of a copper wire, then the strength of the current, *i.e.*, the amount of electricity flowing in a given time, is proportional to the electro-motive power in the cell, and the diameter of the connecting wire, and therefore varies with any change in the cell constituents, or in the diameter of the connecting wire. It has been found by experience that different substances oppose varying degrees of resistance to electrical currents, and, therefore, in considering the quality of any substance, *i.e.*, copper wire as a conductor, we have to consider not only its diameter, but also its peculiar or specific resistance. Of conductors metals are the best; carbon, acids, and salts solutions less good; resins, india-rubber, glass, silk, and dry air conduct so badly as to be practically non-conductors, and are therefore called insulators. The human body, owing to the dry epidermis, is almost an insulator.

We have considered, hitherto, only the resistance of the connecting wire between the two poles, but must not omit that which the current meets in its passage from the positive to the negative metal within the cell. The former is called the external resistance, the latter the internal, and depends upon the liquids and diaphragms interposed between the two metals.

Faradism.—Induction is the name given to a phenomenon exhibited by a wire or other conductor in the neighbourhood of which a current or a magnet is placed. As long as no change occurs in the distance and strength of the latter, nothing occurs in the wire; but as soon as any such change is set up, and as long as it lasts, electromotive force is generated in the wire. In other words, whenever a current (or magnet) is (suddenly or gradually) made or broken near a wire (that is, whenever it is brought from an infinite distance into its neighbourhood, or thence removed to an infinite distance), and whenever any variation of strength occurs in the current (or magnet) while at rest, a certain amount of electro-motive force is induced in the wire.

In an ordinary medical induction apparatus we have—

1. The battery, composed of one or two elements, one of the poles of which is connected with the screw of the interruptor of the primary current, and the other with one end of the primary coil, the second end of the primary coil being connected with the fixed base of the interruptor. This interruptor is a spring hammer which is fixed at one end, as first described, to the primary coil, and the free extremity of which impinges upon the iron core of the primary coil. When at rest the interruptor is in contact with the screw just mentioned.

2. The primary coil, which is made of short thick wire.

3. A core, composed of a bundle of iron rods inside the primary coil.

4. The secondary coil, which is a long thin wire, independent of the rest of the apparatus, and giving attachment at its two ends to the rheophores.

5. A contrivance for graduating the current.

The moment the current begins to flow in the primary coil, the iron becomes magnetised, the hammer is attracted, and the contact between the screw and hammer broken. The current ceases to flow. Immediately the iron is demagnetised, the attraction ceases and the hammer flies back, in virtue of the elasticity of the spring, into contact with the screw. Once more the current begins to flow, and the same succession of phenomena is repeated. At each make of the battery current, then, we have two induced currents, one in each coil, opposed to it in direction, and at each break we also have two induced currents flowing in the same direction. The break currents are the more powerful, and alone have any appreciable physiological effect.

Galvanism.—No actual test of the strength of a current is furnished by the number of cells employed, owing to variations in the electro-motive force of the elements in the resistance in the circuit. For ordinary purposes of measurement we have a sufficient means in the tactus eruditus of the operator, and for more delicate distinctions in the use of the galvanometer, an instrument consisting of a magnet freely suspended in the centre of a graduated disk, so as to be easily deflected by the passage of a current in a coil of insulated wire, properly disposed in its neighbourhood. These changes in the cells are due to—*(a)*, diminution of the electro-motive force; (*b*), increase of the internal resistance; (*c*), the occurrence of polarisation. By polarisation we mean the changes due to the liberation of hydrogen and oxygen at the negative and positive plates respectively. To prevent the antagonism resulting from the secondary current thus produced, it is necessary to interpose between the plates a so-called depolarising medium, which will combine with the hydrogen, and prevent its accumulation on the negative metal. According to the nature of the battery employed this medium may be sulphate of copper, peroxide of manganese, etc.

Changes in the electro-motive force and internal resistance depend on the activity of the cell, for as the zinc is dissolved by use and time, fresh compounds are set free within the cell, and in direct ratio to this change the electro-motive force falls, while the internal resistance rises.

Changes in the circuit outside the cell depend on—

(a) Oxidation of wires, screws, etc., oxides being bad conductors.

(b) Variations in the nature and amount of moisture of the electrodes used.

(c) Differences in the resistance of the portion of the body included between the rheophores, depending upon the moisture and thickness of the epidermis, etc.

The resistance offered by the human body to the passage of currents varies in different parts, and remembering that saline fluids are tolerably good conductors of electricity, while the dry epidermis is a bad conductor, this difference will be readily understood ; it is therefore, that we find the blood and muscles to be the best conductors, and the bones to be the worst. This imperfection of the epidermis as a conductor may be obviated in some measure by freely soaking the part to be operated on with hot salt water, and has recently been very ingeniously overcome by Dr. Morgan, of Manchester, by the employment of subcutaneous galvanism in those cases where the muscles and nerves are especially sought to be stimulated.

The physiological effects of electricity are such as are due—

(*a*) To the current itself.

(*b*) To changes in the current.

Those due to the current itself are—*(a)* electrotonus ; (*b*) refreshing effects. (*c*) vaso-motor effects. By electrotonus we mean the phenomena induced in the irritability of a nerve by the passage of a constant current through~~t~~ it ; there being diminution of nerve excitability in the neighbourhood of the positive pole, and increase in that of the negative pole.

The refreshing effects of the constant galvanic current are so marked as to need little comment ; for by the dynamometer we can easily observe how a tired muscle is restored to vigorous action. The vaso-motor effects are called direct or indirect, according as the current is applied to the parts themselves where the desired result is to be produced, or to the nerve centres or trunks containing the vaso-motor nerves supplying those parts ; in either case the redness and warmth of the tissues indicate the increased circulation due to the induced vascular dilatation.

The physiological effects of change in the current are stimulation of nerves and muscle, vaso-motor effects and stimulation of unstriated muscles.

When the electrodes are applied to a muscle, striated or unstriated, or its nerve, and a current of sufficient strength is sent through them, a momentary contraction is observed. This is followed by a period of rest while the current flows continuously, and by a second contraction when the current is broken.

The main difference between the galvanic and faradic currents is that in the one we have a continuous flow of electricity, and in the other a succession of exceedingly short currents, so that while in the faradic current we have a valuable nerve stimulant, we are driven to the use of the constant galvanic current for all other chemical and physiological effects.

In the selection of a galvanic battery we must take into account the electro-motive force of its elements; the internal cell resistance; above all its constancy, and also its portability and durability.

Mr. de Watteville speaks with highest praise of the Gaiffe chloride of silver battery; but we must declare our predilection for the Leclanché battery. It consists of zinc and carbon as electrodes, peroxide of manganese as depolariser, and solution of sal ammoniac or common salt as excitant. It occupies a high position as regards electro-motive force, has no undue internal resistance, and stands about half way, as regards constancy of current, between the single fluid cells and the true depolarising cells such as the Daniell. It has besides special claims to consideration in its portability and extraordinary durability.

For ward work, or indeed any electro-therapeutical work, we know of no better battery than the Leclanché; its only material drawback consisting in the necessity of sending it back to the patentees should occasion for repair arise.

In Galvano-faradic apparatus considerations of constancy do not arise, and it would be impossible to select one battery for distinction over its competitors. Mr. de Watteville speaks strongly against the employment of copper cups and sponges, and recommends the use of carbon discs, or tin plates, as electrodes. These should be enclosed in covers of flannel or washleather, and have the advantages of conducting the current better than sponges, of being cleaner and more convenient.

Electro-Diagnosis.—For medical purposes we employ galvanisation, faradisation, or general electrisation. Galvanisation may be either continuous, permanent, or discontinuous.

In continuous galvanisation, the rheophores are to be held throughout the whole application, immovably upon two points of the body, so as to include between them, the organs to be acted upon by the current. The continuous form is usually employed for sedative effects.

Permanent galvanisation survives now merely in the use of galvanic chains and other similar well advertised inventions; it possesses no advantage over temporary applications.

The discontinuous form is applied where it is sought to stimulate muscles as well as obtain the sedative effects of galvanisation. In using it we hold one pole immovable, while the other is "dabbed" over the part to be stimulated.

In faradisation the rheophores are used as in discontinuous galvanisation, the negative pole being held over the motor point of the muscle, if such can be detected, while the positive pole is passed over the surface of the muscle so as to ensure thorough contraction of the several muscular bundles.

General electrisation includes central galvanisation, general faradisation and electric baths. Central galvanisation is used in cases of nervous depression; the negative pole is placed upon the pit of the stomach or sacrum, and the positive pole is passed in succession over the forehead and vertex, then along the course of the sympathetic and pneumogastric in the neck, and lastly down the spinal column.

General faradisation is an admirable muscular tonic: it can be used either by sponging the body with the negative electrode, while the positive is held over some insensitive part of the body as the sternum; or by the patient putting the positive wire in a hip bath of salt water, in which he sits and makes use of a sponge connected with the negative wire.

Diagnosis.—In paralysis from cerebral disease as a rule the electrical reactions of the spinal cord nerve and muscle remain normal, exaggeration of these sometimes arising from the removal of the inhibitory action, owing to the cerebral lesion; reactions may in other cases be diminished either from long disuse of the limbs, or from secondary anatomical changes. "This condition of the electrical reaction in paralysis due to central cerebral lesion is of the utmost importance in furnishing means of differential diagnosis and prognosis from such cases of paralysis as are due to peripheral causes."

"It has been proved experimentally that if the spinal cord be injured at the origin of a motor nerve, the latter rapidly loses its healthy structure and functional activity, its nutrition is cut off, it degenerates, and with it the muscle it supplies; both atrophy, and both lose electrical as well as voluntary excitability."

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"It has been proved also that so long as a motor nerve is attached to a healthy centre, such as the lower portion of the cord, even although it may be separated from the brain, and consequently voluntary motion lost, the nerves and muscles retain their electric excitability."

The weight of clinical evidence goes unmistakably to bear out the results of experiment; the same symptoms result from injury to the whole thickness of the cord from fractured vertebræ as have been proved to follow its artificial destruction; they are loss of voluntary power from and below the injured part; loss of reflex action in the parts deriving their nervous supply from the injured part itself, while it is retained or increased in the parts supplied by nerves from below the seat of injury.

In disease of the spinal cord the electrical reaction will vary as the parts possessing different physiological functions are affected; *e.g.*, in—

Lateral Sclerosis.—There is motor paralysis, no loss of reflex action, and no atrophy of nerve and muscle. The electrical reactions are normal. Should sclerosis of the lateral columns be associated with lesions of the anterior cornua of grey matter, marked atrophy of muscle occurs, with loss of response to the faradic current, and rapidly interrupted galvanism, and gradually diminishing contractions, when a continuous current slowly opened and closed is used.

Locomotor Ataxy.—In this disease, involving the posterior columns, if these only be affected, there is disturbance of motor power, reflex action is generally normal, there is no degeneration of nerve or muscle, and electrical action of nerve and muscle remaining normal. If the posterior cornua of grey matter be also diseased we get further weakness of motor power, loss of reflex action, but no changes in the structure of nerve or muscle, or different electrical condition. Should, however, all the grey matter be diseased, trophic degeneration of nerve and muscle arise, and response to electricity is lost, faradism, and quickly interrupted galvanism, losing their power at once, while a slowly interrupted continuous current during an earlier stage produces contraction.

Infantile Paralysis.—In this disease, where a special part of the anterior cornua of grey matter, the large multipolar cells, are affected, the symptoms are motor paralysis, loss of reflex action, loss of function in nerve, and atrophy and degeneration of muscle. The electrical reactions are consequently total loss of response to irritation of nerve, and typical degenerative action in muscle.

Other diseases associated with lesion of the anterior cornua, *e.g.*, progressive muscular atrophy, and bulbar paralysis, which present no paralysis properly so-called, but a paresis increasing directly, as the muscular substance decreases, present on the application of electrical tests, no variation from the normal, other than such as is due to muscular wasting.

When a motor nerve is affected by traumatic causes, by the pressure of a tumour, or by "rheumatic" causes, as in so-called rheumatic facial palsy, the nerve rapidly loses its response to both faradic and galvanic currents; in the course of a week or two its excitability is completely lost, the muscles supplied by it waste, and we have the electrical reactions of degeneration. 7

These altered reactions vary as the muscular tissue recovers itself or its degeneration extends. During the first few days after the onset of paralysis, reaction to both the faradic and galvanic current falls gradually; if the muscle recover itself speedily, response to them both as gradually improves, but should the muscular disease progress, and gradually connective tissue replace the muscular, the faradic current causes no response, whereas that to galvanism increases.

This increase continues for some weeks, and then again diminishes, when if the disease is incurable, response to both currents is lost, and if improvement takes place, again increases, though never reaching the normal standard.

A knowledge of these facts will be of the utmost importance in diagnosing the cause of a symptom such as facial palsy ; for whereas, when this is due to disease of the facial nerve itself outside the skull, we have all the electrical reactions of degeneration ; where the brain itself is the cause of the paralysis, the electrical reactions are normal.

Loss of motor power in one half of the body, due to disease of the spinal cord, may similarly be distinguished from hemiplegia due to cerebral disease. Similarly in functional paralysis ; *e.g.*, hysterical paraplegia, or malingering, the greatest assistance to diagnosis would be afforded by the normal electrical reactions, where the symptoms themselves would require reaction in harmony with the pathology suggested by them.

Treatment.—In considering the application of electricity to the treatment of disease, it is important constantly to bear in mind the general principles and differences of the currents, galvanic and faradic, in their physiological relations. We shall consider then the faradic current as useful mainly in those cases where our object is to stimulate the muscles to action, and to obviate the effects of disuse from central disease, while we employ galvanism where it is desired to effect a sedative action, as in the different forms of neuralgia, or chemical changes, as in peripheral palsies.

Neuralgia.—It is advisable to employ galvanic currents of moderate strength. If a Leclanché battery be used, it is well to begin with no more than 6 to 9 cells, though if the nerve affected be more deeply situated as in sciatica, a largely increased number may be made use of, the electrodes being held unmoved during the application. The sensations of the patient will in most cases be guides to us in this particular, as unduly strong galvanic currents will have the same effect as faradism in producing great pain, and causing violent excitation. It is also important that the application of electricity should not be too prolonged at any one sitting, which should rarely last more than from five to ten minutes.

In general the positive pole should be placed as near as possible to the point where the affected nerve leaves the skull or spinal column, while the negative pole is placed at some point in the peripheral distribution of the nerve where it is most superficial.

In sciatica for example the positive pole is placed over the sciatic notch, and the negative over the course of the nerve so as to include between them the affected nerve.

Similarly in intercostal neuralgia, the positive pole should be held over the point of emergence of the affected nerve behind, and the negative at some point in its distribution between the ribs. Dr. Hammond, of New York, insists, however, that the positive pole should be applied to the seat of pain, and advises that the application should be continuous for at least half an hour. This advice is in direct contradiction of the practice in this country, which Dr. Althaus sums up thus: "It may be laid down as a general principle that a feeble current, used for a short time, produces the greatest therapeutical effect. A current which is strong and painful to bear always does harm instead of good, and more especially so when it is applied for a considerable length of time."

Congestion and anæmia of the brain and spinal cord.—

Dr. Hammond has proved by ophthalmoscopic examination, that the vessels of the retina contract under the influence of the constant current, when used so as to influence the sympathetic nerve. He argued therefrom a similar effect on the cerebral vessels, and has found marked relief in the multiform evidences of cerebral congestion. The current should be of low intensity, and not be prolonged for more than two minutes.

One pole is to be placed over the sympathetic in the neck, the other on the back of the neck, as low down as the seventh cervical vertebra. A similar effect may be produced, by applying the poles one to each mastoid process.

In spinal anæmia, to which Dr. Hammond refers very many of the cases generally regarded as hysterical, and which manifests itself apart from general symptoms by the presence of points in the spinal column tender on pressure, galvanism is our most useful remedial agent. The part selected for galvanisation will of course depend upon the tender spot and the symptoms associated with it. The painful spot should be included between the poles, and a weak current be allowed to flow continuously for three or four minutes ; no sitting being prolonged for more than a quarter of an hour. If the cervical region be affected, the symptoms may be vertigo, noises in the ears, tenderness of the scalp, sleeplessness, neuralgic pains, or sometimes affections of mobility, such as fibrillary twitchings, or clonic spasms of the face and neck.

It is in anæmia of the dorsal portion of the cord that the symptoms are most marked and common, and our treatment most beneficial. The symptoms are mostly those of disturbance of the viscera, the stomach and heart being especially affected : gastralgia, flatulence, acidity, palpitation and infra-mammary pain of which so large a proportion of hospital patients complain in large towns, where hard work, bad air, and insufficient food co-exist, yield with great rapidity to treatment by galvanism as above described. Such treatment would seem to improve the nutrition of the cord by dilating its blood vessels, and has the merit of being more scientific in its application, while it is certainly more useful in practice than wholesale drugging with stomachics.

Writer's Cramp.—In this disease, which seems to be due not to organic change in nerve or muscle, but rather to abuse and exhaustion of the implicated muscles, galvanism combined with the rhythmical exercise of the enfeebled muscles, has proved very useful. Dr. Vivian Poore, who has successfully employed this treatment describes it as follows :—

"One pole (the positive) is placed, let us say, in the axilla, and the other over the ulnar nerve, just where it leaves the edge of the biceps muscle *en route* for the olecranon. The strength of the current is short of that which causes muscular contractions, but is just sufficient to make the patient conscious of a tingle in the end of the little finger, when the circuit is made or broken. The patient is then made to exercise the inter-ossei by separating and approximating the fingers rhythmically."

Chorea.—While authorities differ as to the advantageous use of faradisation in this disease, they are unanimous as to the benefit derived from the use of galvanism. It may be used either to the cord or the limbs. If to the former five cells should be used for about ten minutes ; if applied to the cord and limbs the positive pole should be applied to the spinal column, and the negative to the affected limb. Ten or fifteen cells may be used, and the sitting prolonged for about fifteen minutes.

Exophthalmic Goitre.—In this, well known as Grave's disease, the symptoms of palpitation, exophthalmos and goitre are such as would be producible by paralysis or functional disturbance of the sympathetic.

Morbid conditions of the cervical sympathetic have been described by various observers, and if the pathology of the disease has not yet been firmly established, there is strong presumptive evidence of the proximate cause of the symptoms being dilatation of the vessels of the neck, thyroid body, and orbit, associated generally with excited action of the heart. Strong support is given to this hypothesis by the beneficial results of galvanism, when applied to the sympathetic in the neck, for if the disease has not in every case been cured, its further development is checked, and symptoms are relieved. A current from two to ten cells should be employed, and allowed to flow for about ten minutes, the electrodes being placed one on either side of the neck at the level of the upper cervical ganglion.

Though we have endeavoured to show how electricity may be applied in the treatment of symptoms of functional or of doubtful organic origin, it is mainly in cases of undoubted organic disease that electricity has been employed for therapeutical purposes, and has under such conditions been of marked benefit.

Facial Palsy.—In no case has electricity been more useful as a means of establishing a diagnosis as to cause, or more beneficial in treatment than in facial palsy. When the cause is peripheral, usually the result of exposure to cold or pressure, farado-muscular excitability is diminished, or lost entirely, according as the cause in operation is trifling or marked, while the response to galvanism is increased or normal. In facial palsy due, on the other hand, to cerebral disease, the electro-muscular contractility is either normal or increased to both kinds of currents. In the first class of cases the prognosis is decidedly good, recovery having been recorded after the disease had lasted eight years, and even in one case after a duration of 14 years. In such cases galvanism should be employed; the positive pole being placed over the point of exit of the facial nerve, and the negative over the paralysed muscles. From five to fifteen cells may be used, and the sitting, which should last from five to ten minutes, may be repeated every day. Conjointly with galvanism an attempt may be made to stimulate the paralysed muscles by faradism. Though in facial palsy, due to central cerebral lesion, the prognosis is not so good, an attempt may, after the lapse of a few days, be made to stimulate the palsied muscles with the mildest faradic current capable of causing contraction.

Infantile Palsy.—During the first few days after the symptoms have shown themselves, no electrical treatment should be used. It will then probably be found that the reaction to faradism is lost, while that to galvanism is little or at all impaired. During this stage we apply galvanism to that part of the cord from which the affected muscles derive their nervous supply, using not more than ten cells for a space of two or three minutes, and at the same time endeavour to act on the muscles by putting the positive pole over the spine at the point of exit of the implicated nerves, and the negative at some point in the course of the nerves themselves. Faradism at this period merely irritates the sensory nerves and excites the patient. When later in the disease considerable muscular atrophy has occurred, faradism may be used as we employ shampooing, etc., to keep up the tone of the muscles. It is very important to commence treatment early, as after a time even galvanism may fail to cause muscular contraction; should this occur the prognosis as to good recovery is almost hopeless, but in the earlier stages, if we cannot achieve complete restoration of the limb, we can at least limit the progressive nature of the disease.

Lead Palsy and Progressive Muscular Atrophy.—In these diseases, so much allied in some of their symptoms, electricity occupies a prominent position as an agent for diagnosis and treatment. In lead palsy reaction to faradism is wholly or nearly lost, whether there be extensive atrophy of muscle or not, whereas in progressive muscular atrophy, so long as there remains a contractile muscular fibre, so long is contraction on the application of faradism present. This may furnish an important diagnostic means, in those cases where one is consulted merely for dropped wrist, and no history of saturnine intoxication is suggested. Moreover, treatment in the former case by galvanism is always effectual, whereas no treatment can be of much service in progressive muscular atrophy. Treatment in lead palsy, as in infantile palsy, should consist in the application of galvanism to the cord, and faradisation of the wasted muscles.

Hemiplegia and Paraplegia.—Where hemiplegia is due to clot or embolism, and recovery from the consequent paralysis is slow or incomplete, we can in many cases assist the cure by electricity. It is doubtful whether galvanisation of the head does anything to further absorption and so promote recovery, but its use has been recommended by all authorities. No electrical treatment should be employed during the first two or three weeks after an attack of hemiplegia ; then, only galvanism, and never faradism, may be used. We must begin with the smallest current, and increase it slowly day by day, never prolonging the sitting for more than two or three minutes. The positive pole is to be placed on the forehead, on the side of the lesion, and the negative on the nape of the neck. Later in the course of the case, especially if there be wasting of muscle from disuse, faradisation of the affected muscles is of the greatest use, but must be continued patiently and without intermission until heat return to the limb, and the muscles again freely contract. Our treatment of paraplegia must be conducted on the same principles as that of hemiplegia, in the hope, that even if recovery is not to be anticipated, the progress of the disease may be checked and its ill effects minimised.

THE PUBLIC HEALTH*

DR. HILL'S excellent reports provide all the necessary data for estimating the progress we are making in this town in the important matter of preserving the public health. The report for the present quarter shews a somewhat diminished birth rate, and a death rate which, although not higher than the average mortality for the quarter, is very considerably higher than that of the corresponding quarter last year. This increase is shewn by the tables to be due to the great prevalence and fatality of diarrhœa, which is ascribed by Dr. Hill to the increased temperature. We think there is some reason to dissent from the logic of this conclusion, for while the temperature was "very little above the mean temperature of the previous ten years," the epidemic of diarrhœa was exceptionally severe. Again, the mortality from this cause was small in July, reached its maximum in August, but showed little abatement till the end of September—23 deaths from this cause being registered in the week ending October 2nd, and only 17 in the week ending July 24th, though the mean temperature of the former period was 56·3 and of the latter 62·0. We are more inclined to attribute this epidemic to the extremely long periods of dry weather, broken by storms and floods, which have characterised the meteorology of this season. During ten weeks of the period we are considering the total rainfall was 5·49 inches, while in the one week following it amounted to 4·08 inches.

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* Report of the Health of the Borough of Birmingham for the quarter ending October 2nd, 1880. By Alfred Hill, M.D., F.I.C.

Annual Sanitary Report of the Province of Assam for the year 1879. By A. C. C. De Renzy, Deputy Surgeon General and Sanitary Commissioner.

It is undoubtedly the case that high temperature and scanty rainfall usually go together, but this year we have had a not exceptionally hot year, but certainly an exceptionally dry one, accompanied by a very extensive and fatal outbreak of diarrhœa. Moreover, it is easy to understand how dry weather, by interfering with the water supply, and, perhaps, compelling the people to resort to more than usually impure sources of supply, can give rise to diarrhœa. Dr. Hill's table of water analyses gives ample grounds for such a belief, as almost all the wells he examined during the quarter contained a large amount of solid matter, with a heavy proportion of animal contamination. We should like to know how many of these poisoned wells exist in the town, and whether steps cannot be taken to close them.

The able report of Mr. De Renzy, the Sanitary Commissioner of Assam, contains ample evidence of the influence of impure water supply in causing the diarrhœa and cholera, which are more or less present every year, but which were especially fatal last year. We are told that "the first three months of the year, and up to the middle of April, during which the epidemic was steadily growing in dimensions, were marked by an *exceptionally small rainfall, smaller in fact than had occurred in any of the previous thirteen years,*" and while the disease was especially violent in places where the water supply was unusually bad, as, for example, in the case of a part of the station of Gauhati, where the inhabitants took their water from a blind channel of the river, the report proves the immunity of those who took care to provide themselves with a pure supply. In the Eastern Duars, Dr. Slane reports that, "the epidemic prevailed during the great heat of March, April, and May, when the water in the ponds and small streams began to fail and began to give off a very offensive smell. The disease ceased as if by magic on the first copious fall of rain." In Sibsagor, the civil surgeon says, "the disease chiefly occurred among those who used contaminated water for drinking purposes."

The greater part of Mr. De Renzy's report is taken up with matters of immense local interest, such as the means for providing good water and good food to the imported labourers, who are employed on the tea estates, to which the province owes its wealth and importance. On these subjects the suggestions made are full of sound common sense and practical wisdom, while the advice is tendered in such a pleasant way as to make it all the more readily acceptable.

Surgery does not seem to be very flourishing in Assam, 35 operations being the total number performed during the year in the eight districts comprised in the Commissionership, and which include a territory about as large as France. The Sanitary Commissioner ascribes this small number rather to the apathy of the surgeons than to the absence of surgical diseases.

In the future reports we trust to see a meteorological record included.

THE PATHOLOGY AND TREATMENT OF TYPHOID FEVER*

We gladly welcome this reprint of Dr. Cayley's lectures. All lectures that are worth anything are worth reprinting; few of us can read them with adequate care as they appear in the weekly journals, and still fewer trouble to collect them and read them over again when they are all delivered. But a reprint saves us this trouble, and puts into our hands in a convenient shape agreeable matter for an evening's reading. In the present case there is no question about the agreeableness of the matter, and we have pleasure in congratulating Dr. Cayley on having written the most readable Croonian Lectures that have appeared this ten years, not to go back too far.

Typhoid fever has been for long, and seems likely to be yet for many years, a subject of general and profound interest to the profession. A disease in which the phenomena are so grave and so varied, in the daily vicissitudes of which there is so much food for reflection, and often opportunity for rendering assistance, must appeal to the interest of the dullest physician. On the other hand, it is of such importance to the public health, that it is not without alarm that we read that no less than 73,000 persons died of this disease in England alone during the last nine years, and that it is probable that it is a disease which is on the increase, and that this increase is due in a great measure to the imperfect sanitary arrangements of our dwelling houses.

We trust that the day is not far distant when the legislature will see fit to authorise a compulsory inspection of all dwelling houses, granting powers to the local sanitary authorities to compel owners of house property to provide a proper water supply and drainage free from defects in design or construction. Dr. Cayley's first lecture discusses the etiology of typhoid fever, in which the noticeable point is that he rejects Murchison's view, now so generally accepted, of the possibility of the poison being generated *de novo* in decomposing sewage. The question is a difficult one, and it is always possible that some case of undiagnosed typhoid ambulans may have been the starting point of the epidemics relied upon by Dr. Murchison. The second lecture deals with its pathology, which is mainly an introduction to the third lecture on the treatment. Dr. Cayley finds, as do most pathologists, that many of the organic lesions, and many of those that are fatal, are to be ascribed to the high temperature, but we are not sure that it is quite logical to draw from that the conclusion that it is necessary to give our typhoid fever patients a cold bath whenever the temperature reaches 102° F. This is indeed the whole question at issue. The profession generally in this country recognises the value of cold baths as a means of controlling hyperpyrexia ; but it is not conceded that the experience of individuals, or statistical results warrant a systematic application of the so-called antipyretic system, especially by means of baths. It is fair that Dr. Cayley's teaching should be tested by his own experience. He tells us that he has treated 130 patients in this manner, of whom 18 have died, giving a mortality of 13.8 per cent., which is not much below the general average (15.9) of the London Fever Hospital, and decidedly inferior to that attained to by Dr. Russell (5 p.c.) in the Fever Hospital of Glasgow, who follows the expectant course of treatment.

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* "The Croonian Lectures on some points in the Pathology and Treatment of Typhoid Fever." By Wm. Cayley, M.D., F.R.C.P. London: J. and A. Churchill.

ATROPHY OF THE STOMACH.*

Dr. Fenwick has done much good service by drawing attention to changes in the stomach which are not much heeded by pathologists. Indeed, it is not going too far to say, that the stomach is an organ about which practical pathologists know, as a rule, very little, as compared with what they know of the kidneys, the liver, or even the brain. The functional derangements of the stomach are not frequent causes of death, and apart from the more serious organic changes, such as ulcer or cancer, or in poisoning, few cases come to the *post-mortem* table in which the chief interest is centred in the stomach. Hence probably its neglect.

Dr. Fenwick believes that a certain number of cases, which are at present classed as idiopathic anæmia, are really cases of atrophy of the stomach, or rather atrophy of the pepsiniferous glands, causing inability to digest albumen, and giving rise to nitrogenous inanition with its symptoms anæmia, weakness, &c. He gives a few cases to support this opinion, with *post-mortem* details of the state of the stomach, which was in the condition described.

Dr. Fenwick thinks that when we meet with anæmia in a man, at or past middle life, from whose case we can exclude hæmorrage, malaria, leucocythæmia, and Addison's disease, which has come on gradually and progressed in spite of appropriate treatment, and which is accompanied by persistent loss of appetite, especially by a distaste for animal food, and by severe flatulence and occasional vomiting, we are justified in suspecting the presence of chronic atrophy of the tubules of the stomach. This is not very precise diagnosis, but obviously it would not be possible to obtain proof of the condition without testing the secretion of the stomach, which, unfortunately, cannot be easily collected, as neither emetics nor stomach pumps are nice adjuncts to diagnosis; but recently the gastric juice has been collected for examination by making the patient swallow small pieces of sponge, to which a silk thread was attached, so that they could be drawn up when soaked with the fluid. In this way some trustworthy information is obtainable.

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* On Atrophy of the Stomach and on the Nervous Affections of the Digestive Organs. By Samuel Fenwick, M.D. London: J. and A. Churchill.

NEW MATERIALS
FOR THE PRESENT AND COMING SEASONS

T. WHITEHEAD,
Tailor, &c.,
54, NEW STREET, BIRMINGHAM,
(OPPOSITE THE THEATRE ROYAL.)

generation of students by translating Dr. Giraud-Teulon's admirable little book. It contains in the clearest possible shape those elementary descriptions of fundamental facts, the proper understanding of which is essential to further progress.

The arrangement of the subject matter of the book is upon a purely clinical basis, a method which presents the

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* An Elementary Treatise on the Function of Vision, and its Anomalies. By Dr. Giraud-Teulon. Translated from the Second French Edition, by Lloyd Owen, F.R.C.S.I. London: Bailliere, Tindall and Cox.

least difficulty to the beginner. The scope of the work does not extend beyond the indication of the anomalies of the refractive media, and does not include diseases of the retina, or consequently the use of the ophthalmoscope. But so far as it goes it fulfils its author's purpose very completely. One of the most interesting subjects in modern hygiene is the prevalence of myopia, as a consequence of the various employments resulting from civilisation. According to Dr. Cohn, who speaks with the authority derived from the examination of 10,000 cases, there are 11·4 per cent. of myopes in the town schools of Germany, while in the village schools the proportion is only 1·4 per cent.

The relation of these numbers suggests the importance of the subject. But myopia does not mean simply that so many people must wear spectacles to improve their eyesight, it means that they are affected with a condition which threatens to destroy vision altogether. Out of 900 cases of myopia examined by Dr. Giraud-Teulon, the diminution of visual acuity was found to be very great, and the proportion of absolute blindness from choroidal hæmorrhage, posterior staphyloma or detached retina, very large. The means by which these evils may be averted are by good illumination in school rooms, and larger and better printing in school books, though the latter are not so commonly in fault in England as in Germany.

We heartily recommend this little work to students who intend, as all should, devoting some time to the study of eye diseases ; it may also prove useful to practitioners who have not been fortunate enough to have gained for themselves any practical knowledge of this department, for even though it cannot make up for this, it may enable them, by mastering the principles, to recognise the danger of neglecting the earlier symptons of defects of vision.

MALARIA: ITS CAUSES AND EFFECTS.*

DR. RUSSELL has had excellent opportunities in his official position in India for observing the characters and effects of malarious diseases, and we congratulate him on the energy he has displayed in writing a book under the unfavourable conditions of the climate of Assam.

The first practical point worthy of notice in this volume is the evidence the author offers of the introduction of malarial poison into the system by drinking water, and the immunity enjoyed by those who carefully attend to this source of infection, in which we think he has made out a very good case for pure water.

Speaking of malarial gastritis the author alleges that opium eating affords a protection from malaria, and jumps to the conclusion that malaria is a cause of opium eating, supporting this theory by asserting that "it is interesting to notice that the habit of opium eating prevails, almost exclusively, among the inhabitants of plane regions, and swampy malarial countries." A little further on (page 39) he even states that "none of the hill tribes on the eastern frontier are opium eaters." But, as a matter of fact, among the hill tribes on the north-eastern frontier the Nagas, Kamtis, and Singphus are all habitual opium eaters; every man carries in his bag a little balance for weighing opium, and those who have travelled into the Singphu country have found opium the only medium by which they could buy food, hire coolies, or obtain permission to continue their journey. Again, Dr. Russell says, "In these regions, such as Assam, for example, the habit (of opium eating) cannot be said to be of indigenous origin," because, at the present time, "the drug has to be imported to meet the necessities of the people." Dr. Russell seems to think it a proof of the practical value of a habit, if people take the trouble to import the needful article; this may be so, but opium was largely grown in Assam before the British government assumed the rule of the province and forbade its cultivation.

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*"Malaria: Its Causes and Effects." By E. G. Russell, M.B., B.Sc., Lond.; Surgeon, Bengal Medical Service; Civil Surgeon, Kamrup, Assam. Calcutta: Thacker, Spink, & Co.

In speaking of malarial changes in the liver the author speaks of an increase in the "cellular elements of the liver," the enlargement consisting of "new liver cells," a statement which is unsupported by any evidence, and seems to be in need of some.

Dr. Russell indulges in lengthy quotations and abstracts from Quain's Anatomy, Reynold's System of Medicine, Parke's Hygiene, and other standard works, that we might naturally expect to find in the modest library of a mofussil surgeon, but it was scarcely necessary to reprint a passage of half a page twice in the first hundred pages. Dr. Russell repeats himself too *verbatim*, over and over again. For example (at page 46), we read, "With regard to the influence of the malarial cachexia in the production of this disease, Morehead regards external cold acting," &c., &c.; at page 71, we find "Morehead records that it predisposes to the production of liver abscess. He regards external cold acting," &c., &c. The same cases and the same remarks recur so frequently that the book seems to be a collection of essays written at different times and never welded together properly into a book.

We must refer to the author's theory of malarial action. A few years ago all theories were based on the sympathetic system of nerves; at present the fashionable obscurity in which to plant a hypothesis is the process of fermentation.

Dr. Russell's theory is, therefore, rather old fashioned. It is that the malarial poison acts specifically on the vasomotor system of the spleen and digestive viscera, and its periodicity may be explained by imagining the stimulus of malaria to be of such a kind that its action on the coats of the vessels in these viscera meets with a response only after long intervals, and an analogy is suggested between the period intervening between the stimulus of the ureter by electricity and its contraction. The second and larger portion of the book is taken up with an analysis of thirty-nine cases of rupture of the spleen; but in this, as in the former portion, the author is too diffuse, and repeats himself so much, that, although the facts he relates are no doubt of a certain value, especially to the Indian medical jurist, they need a second analysis to enable one to get at the grains of wheat hidden among the enormous ballast of chaff.

ORIGINAL COMMUNICATIONS.

A SERIES OF FIFTY CASES OF ABDOMINAL SECTION FOR VARIOUS PURPOSES.

BY LAWSON TAIT, F.R.C..S, ETC.

INCREASING success in dealing with ovarian tumours has led me, as well as others, to the belief that operative measures might be applied successfully to other abdominal tumours which have, until recently, been regarded as hopelessly beyond our reach as ovarian tumours were thirty years ago. I have, therefore, arrived at a rule, to which I gave utterance some time ago in a paper read at the Royal Medico-Chirurgical Society, and from which no dissent was expressed, that all abdominal tumours which were threatening the life of the patient, or rendering it miserable, unless they were clearly of a cancerous nature, should be explored by abdominal section. Upon this rule I have for a long time acted, and have as yet seen no reason to regret my action, whilst on very many occasions I have had sufficient reason to be gratified with the results. It is a series of fifty of these operations which I now desire to bring before you, arranged in groups according to their nature and purpose, merely premising that of course they include some of more than usual interest, which have been already published in isolated form, and to which I shall, therefore, make only brief reference.

I divide these abdominal sections into, first of all, cases of simple exploratory incision where nothing is done but carefully to handle and inspect the appearance and relations of the tumour, and then close the wound. Of my fifty cases no less than seventeen came under this heading, and of these there was not a single death. The patients not only recovered from the operation, but lived in many instances for many months, and in at least three instances for some years after the operation without being any the worse of it.

No.	Medical Attendant.	Hospital	Private	Result of Section.
1	Hospital case	R		Lived for at least 15 months.
2	Mr. Croft		R	Large cystic kidney, lived nearly 4 years, and free from ascites which previously she suffered from.
3	Hosp. case	R		Mass of pelvic cancer, lived 4 months.
4	Dr. Handford	R		Mass of omental cancer, died after return home.
5	Dr. Hickinbotham		R	Ovarian tumour with papilloma, could not be removed, still alive.
6	Dr. M'Lintoch		R	Mass of soft sarcoma, origin not ascertained, still alive.
7	Dr. Ingleby M'Kenzie		R	Ovarian tumour with papilloma, died about six weeks after from rapid extension of cancer to omentum.
a8	Mr. Mathias	R		Cancer of ovary, died in 5 weeks.
a9	Hosp.	R		Soft myxoma growing from coecum, still alive and in much better health.
a10	Hosp.	R		Papilloma of peritoneum, still alive.
a11	Hosp.	R		Ovarian tumour with papilloma, died 6 weeks after.
a12	Hosp.	R		Ovarian dysmenorrhœa, ovaries so adherent that they could not be removed.
a13	Hosp.	R		
a14	Hosp.	R		Cystic ovarian tumours with recurrent rupture of cysts, producing perimetritis, tumour could not be removed.
a15	Hosp.	R		Cancer of omentum, died in 9 weeks.
a16	Hosp.	R		Nature of tumour not discovered, still alive.
a17	Hosp.	R		Tumour of spleen, could not be removed, still alive.

Of these cases seven were operated upon without antiseptic precautions and ten with, and all recovered equally well. In three cases, the case of cystic kidney, the myxoma of the coecum and the tumour of the spleen, positive benefit seemed to be obtained from the operation; for whereas, before it they all three suffered from dropsical effusion into the peritoneum, in none of them did it recur after it, and the latter two are now in much better health than before the operation.

In seventeen of the cases operations were begun for the removal of the tumours, but had to be left uncompleted on account of the impossibility of removal. Of these six resulted in complete cure, two recovered without any detriment, and nine died from the attempted removal. They are as follows :—

No.	Medical Attendant.	Hospital	Private.	Result of Section.
1	Hospital case	R		Cystic ovary : cysts emptied and drained ; after prolonged suppuration she completely recovered, and is now quite well and the tumour gone.
2	Hosp.	R		Cystic ovary, recovered, afterwards lost sight of.
3	Hosp.	R		Cysticovary, recovered, afterwards lost sight of.
4	Hosp.		D	Cancerous tumour of ovary, cyst into which hæmorrhage had occurred drained into vagina, tube passed through peritoneum, died of hydrothorax. (Brit. Med. J.)
5	Hosp.		D	Incomplete removal of large cystic tumour of origin never ascertained, but not ovarian, died eight weeks after operation.
6	Dr. Handford	R		Attempted removal of large cyst of unknown origin, drained and completely cured, now in perfect health.
7	Dr. Eshelby		R	Hydrometra, completely cured by drainage, now in perfect health.

No.	Medical Attendant.	Hospital	Private.	Result of Section.
8	Hosp.		D	Haemato-salpinx, drained, died on fourth day of septic peritonitis.
9	Mr. Freer.		R	Haemato-salpinx, drained, completely cured, now in perfect health.
10	Mr. Hall Wright.	R		Large cyst of mesentery, supposed to be a parovarian tumour previous to operation, completely cured by drainage.
11	L.T.		D	Large cystic kidney, about half of the tumour was removed, urine drained from stump till death on 12th day.
12	Dr. H. Swete		R	Small cystic tumour of ovary giving intense pain, cysts laid open, tumour could not be removed, completely recovered, and now in perfect health.
13	Mr. F. Giles		D	Incomplete hysterotomy.
14	Mr. Horsfall	D		Incomplete hysterotomy.
15	Hosp.	D		Incomplete hysterotomy.
16	Hosp.	D		Incomplete hysterotomy.
17	Dr. Boddaert		D	Incomplete hysterotomy.

I have said that I have never had occasion to regret having made simple exploratory incisions, but I have in this list occasion for regret in at least four of the cases that I did anything more than explore. If my growing experience teaches me anything at all, it has taught me to be extremely careful about beginning the removal of the tumour, after I have made the exploratory incision; and, also, after having begun the removal to persevere to the end. A simple exploratory incision has never been fatal in my hand, but nearly half of my incomplete operations have been. Of the fourth case in the list I may say that I was urged to the operation by the patient and her friends against my own judgment, and that the lessons taught me by it have enabled me to decide better in two or three cases of a similar kind since. Further, I may say that the appearances seen then have enabled me to decide in three cases since, that nothing more than the exploratory incision was desirable.

In the fifth case, I found when the patient died, eight weeks after the operation, that I had removed four-fifths of the tumour, and that if I had persevered for a little longer I should have got it all out and probably have saved my patient. A similar experience I have to record of the eleventh case—the cystic tumour of the kidney. I was frightened by the appearance of huge venous sinuses, for which I should have less dread now. I had removed all but the base of the tumour, and that would have given me no more trouble than what I had already overcome. A more severe lesson still was taught me at Ghent, by Dr. Boddaert's case, for there, after having separated a very large area of dense adhesions which bled most profusely, I stopped within an inch of their limit, below which was a narrow pedicle of most convenient dimensions and length.

The other three cases of incomplete hysterotomy were efforts to enucleate the tumours which were unsuccessful. In two of them I removed the ovaries as a final step, in the hope that, if the patients recovered the attempt at hysterotomy, they might be benefited by the oöphorectomy. This is a practice I should not repeat, for reasons I shall give in another group. It is somewhat comforting after this to be able to record that six of my incomplete operations resulted in complete cures.

To sum up briefly my conclusions from these cases, I may say that my practice now is to consider most carefully before I begin to attempt the removal of a tumour, what the probabilities are of my being able to finish it. If I do not see my way to that I close the wound. If I think I can remove it, and having begun to do so, I go right on till I get it out, and my results of this practice I shall lay before you in due time. At present they are much more satisfactory.

ec ? My next group of cases consists of nine cases of hyster~~o~~tomy, that is, removal of the body of the uterus on account of myomatous growths, an operation concerning which I have not nearly so high an estimate as I had a few years ago. I believe the largest experience of it has fallen to the hands of M. Pean, who is said to have performed it about thirty times with more than half of the cases recovering, I cannot find out the exact figures. Mr. Wells has done it about a dozen times, but I do not know the results.

There are two main difficulties about the operation which seem to me to be so great as for ever to forbid it becoming very extensively adopted. In the first place the cases for which it is most urgently demanded are those in which the hæmorrhage cannot be controlled by other than operative means, and when they come for operation they are so anæmic that any operation is fraught with the most imminent risk of death in a few hours from the formation of fibrinous clot in the heart.

The second difficulty is in the treatment of the pedicle. This is usually so short, thick, and firm as to defy almost any kind of treatment. In the practice of others I have seen the tumours with pedicles capable of treatment with the clamp, or the ligature as satisfactory, as is the case in most ovarian tumours, but this has not, unfortunately, been my own experience. I have never yet had a case of hysterotomy with a good pedicle, and this has been the cause of death in four out of my five fatal cases, and in my four successful cases the difficulties were almost as great as in the unsuccessful ones.

My first four cases have been already published in papers read before the Royal Medico-Chiurgical and Obstetrical

Societies, and therefore need not be further detailed. Two of them recovered and two died—both deaths occurring on account of the thickness of the pedicle preventing me getting the wound closed accurately round it after it had been secured by Mr. Wells' calliper clamp.

In my fifth case I secured the pedicle by Pean's wire clamp, and death occurred from hæmorrhage in a few hours caused by the breaking of one of the wires.

In my sixth and seventh cases I used a wire clamp of my own devising with successful results, although both patients ran narrow risks of death from the prolonged suppuration inevitable in the separation of the enormously thick stump.

In my eighth and ninth cases the application of any clamp was an impossibility, owing to the shortness and thickness of the pedicle. In the first of these two I passed hempen cord round the cervix, and, having tightened it by means of an écraseur, I cut off the tumour, I then passed a ligature, by means of a needle, round the lateral vessels on each side, and tied them firmly, and then secured the pedicle by ligatures in two halves, and finally by a thick silk cord round the whole mass. By the oozing of serum from the œdematous mass the ligatures became loose, and on *post-mortem* examination we found that death had occurred from slow oozing.

The ninth case was one in which there were two nodules at the back of the pedicle which I had to enucleate. I treated the pedicle in much the same way as in the preceding case, save that, as an additional precaution, I cut the tumour off in such a way as to make flaps, as in a limb amputation, and I carefully tightened them together by stitches. To do all this I had to go so far down that I fear a ureter was injured. At any rate she died on the fourth day of peritonitis, but as a *post-mortem* examination was not allowed, I cannot say exactly what the cause of death was.

My conclusions from this experience are that, save when there is a pedicle sufficiently narrow and long to be secured outside by my wire clamp, I shall not attempt hysterotomy, but shall content myself with removal of the ovaries instead. This alternative I have adopted recently in four cases, and in three of them with perfect success. The fourth case died of heart clot, but in that case the hæmorrhage had reduced the patient to the extreme of anæmia, and I should not repeat the attempt in such a case again, or indeed do any operation in such a perfectly hopeless state—almost moribund—as this patient presented.

The next group consists of two cases of extra-uterine gestation treated by abdominal section, both of which recovered ; and of the cases full details have been already published.

Then there come next a group of cases of suppurating pelvic hæmatocele treated by abdominal section and drainage, and having all most satisfactory results. These cases are of great importance because they are the first cases of their kind which have been dealt with in this way, and they open out a better method of treatment for this dangerous and always protracted disease.

Everyone knows that extra-peritoneal hæmatocele is an accident of very common occurrence, and one of comparatively trifling importance in probably nineteen out of every twenty cases, recovery taking place without interference of any kind. Intra-peritoneal hæmatocele is a very much more serious and less frequent occurrence, and though I have discussed the possibility and propriety of operating for it by opening the abdomen, I have never yet had an opportunity of carrying it into practice. The cases I have seen having been all too far gone before I was called to them, with one exception. A case I saw in consultation with Dr. Johnstone, but a long time ago, and then I had not the courage in abdominal surgery which subsequent experience has given me. In another such instance I should not hesitate to make an exploration.

Every now and then we find a simple and easily cured extra-peritoneal hæmatocele converted into a serious disease by the occurrence of suppuration. Until about a year ago I dealt with such cases by tapping them from the vagina with very varying results ; about half my cases proving fatal. The fact is that the relations of the pelvic peritoneum vary so much in the presence of tumours, that it is wholly impossible to tap a pelvic tumour with any certainty of missing the peritoneal folds, and to include them in tapping an abscess means death for the patient. Besides mere tapping in a suppurating encysted hæmatocele will generally result, even when the patient survives the tapping, in the formation of a chronic para- or peri-metric abscess, which will take months or years to close. It therefore occurred to me that it would be a much safer proceeding to open such abscesses from above by abdominal section, and that the closure of the cavity would be far more rapidly accomplished by drainage from above than by vaginal drainage. The three cases I am about to narrate will, I think, prove my case.

These three cases seem to me of so much importance that I propose to give them in full detail. A patient was sent to me in February, 1879, by Mr. Gwinnett Sharp, of Walsall, suffering from a pelvic tumour associated with very severe symptoms. She was 22 years of age, and had been married nine months. Her menstruation had always been too frequent and too profuse, and six weeks before I saw her it had stopped suddenly during its course, and this was associated with the onset of violent pelvic pain—the leading features of extra-peritoneal hæmatocele. A few days afterwards she shivered and became very ill and feverish, and these symptoms had become intensified when I saw her ten days after their occurrence. She was then emaciated and hectic looking, with a high night temperature, intense pain and tenderness over the lower abdomen, and, when examined, a large fluctuating tumour, adherent to and behind the uterus, and going on either side of it, was found to occupy the pelvis, and rise about half way up to the umbilicus. The roof of the pelvis was fixed and hard, and no fluctuation could be felt there.

The nature of the tumour could be open to only two suggestions—that it was a suppurating parovarian cyst with peritonitis, or a suppurating hæmatocele. I leant to the latter view as it was in consonance with the history, and I have never known a parovarian cyst suppurate, whilst hæmatoceles constantly do.

In any case I determined to open it from above, and this I did. I found a large cavity containing about two pints of fœtid pus with decomposing blood clots. This I carefully cleansed out, and fastening the walls of the cyst carefully to the walls in the pariet~~i~~es, I fixed in one of Koeberle's glass drainage tubes five inches long. Seven days after the operation I placed a three-inch glass drainage tube, and in another week this was replaced by a soft rubber tube. The patient got up on the twentieth day after the operation, and in ten days more went home perfectly well with the abscess healed, and she remains now in perfect health (March, 1880).

The second case was sent to me by Dr. Flinn, of Birchills. She was 45 years of age and had never been pregnant, save one doubtful miscarriage soon after marriage, nineteen years ago. Symptoms resembling those of hæmatocele had occurred eight months before I saw her, and since that time she had been losing flesh, had lost her appetite, was troubled by constant thirst and night sweats, and she had a rising night temperature. The uterus was fixed in a mass of effusion occupying the left broad ligament, and partly the right one also; and the mass on the left side encircled the rectum, forming a pronounced stricture, as hæmatoceles of the left broad ligament frequently do. No point of fluctuation could be felt in the pelvis, but the symptoms pointed clearly to the presence of pus. I therefore determined to open the abdomen, and readily obtained the consent of my colleagues to this proceeding.

On reaching the peritoneum the two layers were found to be adherent, so that the cavity was not opened. A large abscess was opened just behind the base of the bladder, between which and the uterus it principally lay, but stretching round behind the rectum. The floor and posterior wall of the abscess were found to consist of organised blood clot, so that its origin was in a blood effusion into the broad ligament. A glass drainage tube was inserted, and this was changed for one of Chassaignac's wire tubes on the eleventh day after the operation. She sat up on the twenty-first day after the operation, and the tube was finally removed on the 26th. She went home on the thirtieth day perfectly well, and has remained so ever since, now nearly ten months.

The third case was a patient of Mr. Hallwright's, in whom he had diagnosed hæmatocele some four weeks before I saw her. Symptoms of suppuration set in, and I performed exactly the same operation as in the first case; that is the peritoneum was opened, and the abscess emptied and cleansed, and then the edges of its opening fastened to the edges of the parietal wound, and a glass drainage tube fastened in. This case also was an undoubted hæmatocele of the broad ligament. Eight days after the operation the glass tube was changed for a wire one, and this was removed in twelve days more. She left the hospital perfectly well only 33 days after her admission, and has since remained perfectly well.

The remaining cases are two of an anomalous character.

The first was a woman, who was sent to me by Dr. Cowen, of Kidderminster, with small tumour in the linea alba having every appearance of a scirrhous growth. To obviate any possibility of its being an exhomphalos I cut carefully through it in the middle line, and found I was quite correct, that it was a schirrous growth originating in the tendenous structures, and that it did not involve the peritoneum. I opened the cavity, however, for the tumour approached the membrane so closely that I thought it better to remove a wide margin of all the textures. She made a perfect recovery.

The other was a case of pelvic tumour of doubtful but probably malignant character, pressing on and causing obstruction of the rectum. She had an enormous ascitic distension, and I deemed it better to open the abdomen in the middle line, and open the colon by medium colotomy, than to tap and open the gut in the left loin. This proceeding I carried out without difficulty; but the patient was too far gone before the operation was done, and she died on the fifth day. She was under the care of Mr. Langley Brown, of West Bromwich.

I have now put before you in substance the results of my first cases of abdominal section for purposes other than the complete removal of diseased ovaries, which latter belong to a class so completely by themselves that everyone has agreed to record them separately.

Such a collection of cases as constitute my present series cannot be classed together with any good statistical result; but still it is worth note that of 50 heterogeneous cases of pelvic tumour in which the abdomen was opened as a matter of routine practice, fifteen died and sixteen were cured, whilst the remaining nineteen recovered from the operation without having been in any way injured by it. The experience gained in these cases is such that I think it more than likely that, if I live to complete another group of such cases, I shall have a much better story to tell; indeed I am already well into the second series, and have, so far, a marked improvement in my results. These I hope to lay before you in some future communication.

NOTE ON THE OCCURRENCE OF DROPSY IN GRANULAR KIDNEY.

BY ROBERT SAUNDBY, M.D., EDINBURGH,

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TIME has worked a revolution in our ideas since Bright, writing of granular kidney as a cause of dropsy, admitted that "the disease may exist in all its force, and may be fatal, with its sudden and insidious attacks, without the effusion of a single drop of fluid into the cellular membrane, at any period of its course; and still more frequently will fatal instances be found when the anasarca having existed, has entirely ceased." At the present time, absence of dropsy is regarded as one of the principal clinical characteristics of the granular kidney, although we use this term in a narrower sense than Bright did.

Yet it is not true that the absence of dropsy is a constant phenomenon of granular kidney—no author goes so far as this, and all admit that general anasarca is sometimes present. Bartels* attributes this to (1) coincident mitral insufficiency and fatty degeneration of the cardiac muscle, the kidneys being only moderately contracted; or (2), to extreme degeneration of the kidneys. Dr. Grainger Stewart† attributes it to the occurrence of "inflammatory irritation in the tubules superadded to the primary disease," or to the coexistence of "cardiac, pulmonary, or hepatic complications." Dr. Dickinson‡ says only 19 out of 68 cases were free from dropsy throughout all the stages of the disease.

Johnson found dropsy present in 14 out of 33 cases of granular kidney, while of 26 cases of fatty kidney only two were free.

Charcot says "at an advanced epoch when the heart is weakened in consequence of the general failure of nutrition, the urinary secretion diminishes; or it may be, the kidney becomes more and more impermeable, and, under these conditions, dropsy may occur as in the large white kidney."

There can be no doubt, therefore, of the general agreement of authorities as to the occurrence of dropsy in this form of Bright's disease; but in spite of this there is a disinclination to diagnose granular kidney when extensive dropsy is present, and with the view to determine more exactly the relationship of these conditions, I have gone over the pathological registers of the General Hospital for the last ten years.

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* Ziemssen's Cyclopædia. Vol. xiv., p. 423.

† Bright's Diseases, p. 231.

‡ Albuminuria, p. 176.

The following table includes 98 cases, in which granular kidneys were found *post mortem;* they are arranged under the diagnosis which was handed in to the pathologist, and divided accordingly as the weight of the two kidneys was above or below eight ounces.

This subdivision according to the weight of the kidneys, requires a word of explanation. It is well known that between the two extreme types, known as the large white and small red kidneys, all shades of intermediate varieties may be met with. Many of these intermediate varieties are undoubtedly both "fatty" and "fibroid," while it must be admitted that many full sized kidneys have adherent capsules, rough granular surfaces, contain cysts, and show some relative thinning of the cortical parts without any particular fatty change. Therefore, while it is permissible to anticipate a greater approximation of the clinical characters of some of these larger kidneys to those of the large white kidney, we cannot expect that in all cases.

TABLE.

Diagnosis.	No Œdema		Œdema.		Total.
	Large.	Small.	Large.	Small.	
M. Brightii	4	5	9	4	22
M. Cordis	6	3	6	1	16
Apoplexy	4	7	-	-	11
Aneurism	1	-	-	-	1
Atheroma	-	-	1	-	1
Phthisis	1	-	-	-	1
Bronchitis	2	-	1	-	3
Fibroid Phthisis	-	1	-	-	1
Pneumonia	2	-	-	-	2
Pleurisy	1	-	-	-	1
Cirrhosis of Liver	-	-	1	-	1
Ascites	-	-	1	1	2
Hernia	10	2	-	-	12
Fractures	2	10	-	-	12
Amputation	-	1	-	-	1
Ulcer	1	-	-	-	1
Gangrene	3	1	-	-	4
Erysipelas	1	3	-	-	4
Pemphigus	-	1	-	-	1
Burns	-	1	-	-	1
	38	35	19	6	98

At a glance it may be seen that 25 out of 98 cases were dropsical, but this dropsy varied very much. In 7 cases the lower limbs only were œdematous; in 3, the abdomen and lower limbs; in 1, the face only; 14 had general anasarca.

This proportion of 14 cases out of 98 seems very small, but if we turn to the table it appears that a very large number of the cases in which no dropsy appeared, died from some acute disease or accident, which in all probability cut short the renal disease before it reached its ultimate stages. If we exclude these conditions we reduce the number of non-dropsical cases to 22 against 14 with general anasarca, and 11 with partial dropsy.

There can be no doubt that this proportion is much below what is met with in connection with the large white kidney, for out of 14 cases, collected over the same period, 11 had general anasarca, one ascites and œdema of the lower limbs, one œdema of the lower limbs, one only being free from dropsy.

So far then, 73 cases comprising nearly equal numbers of the large and small varieties of granular kidney, were free from œdema.

We come now to consider the second group, the 25 cases in which œdema was present. The clinical aspects are very instructive here. In the former group only nine out of 73, or about 12 per cent., were recognised during life as cases of Bright's disease; in the group we are now examining 13, or rather more than 50 per cent., were duly diagnosed as such. In three cases the diagnosis was ascites or cirrhosis of the liver, and in these cases the dropsy was confined to the abdomen and lower limbs. In two of these cases the liver was cirrhosed; in the other case there was cancer of the uterus, and chronic peritonitis. Valvular disease of the heart was present in six cases. One case was described as "fatty heart."

But it is noteworthy that of these 25 cases 19 had the larger form of granular kidney—a fact which assuredly is not without pathological significance.

It is moreover noticeable that this group contains none of the causes of death which made up so large a proportion of the former division, *e.g.*, herniotomy, fractures, &c.

I have nothing to add to what I have quoted above respecting the pathology of the dropsy of granular kidney. Cardiac, pulmonary, and hepatic complications are not uncommon, and account for some of the cases. Degeneration of the cardiac muscle is probably the most potent factor of all, as the table shews that valvular disease of the heart and various pulmonary diseases occurred without inducing any dropsy.

The conclusions I wish to be drawn are, that where the disease runs its natural course more or less dropsy occurs in the last stages of nearly half the cases, and general dropsy in nearly a third; and that it is most commonly associated with the larger form of granular kidney.

ON THE TREATMENT OF EMPYEMA BY EXCISION OF A PORTION OF A RIB.

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THE subject of resection of a portion of a rib for empyema is still exercising the minds of those who are engaged in surgical practice, and therefore I have thought it my duty to bring under the notice of the profession two cases in which I have resorted to the operation. Although my cases have not been fortunate, I do not record these with the intention of disparaging or even of "damning with faint praise" a method of operation having much to recommend it, and which has for its aim the relief of a condition which has hitherto baffled the best efforts of most surgeons. I do so simply with a view of exemplifying the difficulties which beset the operation even in suitable cases, and of obtaining by a free discussion of the question the opinions of those who have, like myself, tried the operation in the conviction that it was calculated to prove efficacious, and in the hope, that by its careful performance, some sufferers by a disease which has hitherto been most fatal might be saved from prolonged suffering and possibly restored to perfect health.

I was induced to give attention to this subject by witnessing the failures which had followed mere thoracentesis.*

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* Of 498 cases of paracentesis thoraces, collected by Günther in 1861, 302 were cured, 149 died, 16 were improved, 19 recovered with a fistulous opening, and of 12 the result was unknown. Of 132 cases analysed by Dr. John A. Brady, of Brooklyn, 79 were cured, 14 relieved, and 37 ended fatally (11 being carried off by phthisis). In one the result was not known, and in one no benefit followed.—Gross' System of Surgery, Vol. II., p. 455.

A paper on the treatment of empyema by resection of one or more ribs, which was read before the Midland Medical Society, about a year ago, by Mr. W. Thomas, surgeon to the Birmingham and Midland Free Hospital for Sick Children, struck me as both valuable and scientific. After calling attention to the first recorded cases of this operation, reported by Dr. Peitavy in the London Medical Record, of August 1876, Mr. Thomas gave the particulars of nine cases which had been operated on by himself or his colleagues; eight of these recovered, and one died. The results were very encouraging, and were thus summarised by him—"Four completely recovered with expansion of the lung and restoration of the excised rib." "In two of the (above?) cases the patients were so feeble as to cast a doubt on the propriety of the operation, and the others would apparently have succumbed to the chronic hectic symptoms from which they suffered. Of the four remaining cases, three are completely healed, and the lungs in various stages of expansion; the fourth is doing well." I wish I could report as favourably of the two cases which I now give.

Case I.—*Empyema—Excision of Rib—Death.*—Amy Gertrude Harvey, aged 2 years, was admitted March 11th, 1880, into the Queen's Hospital, under Dr. Heslop. The child was well and in good health until October, 1879, when she had measles, but made a good convalescence, and was well until five weeks ago. She then became feverish, with a cough; no expectoration, but increasing dyspnœa.

Symptoms upon Admission.—There is great dyspnœa; obvious enlargement of the right half of the chest; bulging of the intercostal spaces; and but slight movement in respiration; the liver is depressed, and extends

1¼ in. below the costal arch, and the heart is displaced to the left; the apex beat being visible and perceptible to the touch 1 in. below, and 1½ in. outside (left) of the nipple line; there is dulness from apex to base, except in front for 2 in. below the clavicle; over the entire chest there is obscure, soft breathing of bronchial type, heard best in the interscapular region; vesicular murmur is abolished; tactile vibration and vocal fremitus are useless with such a noise; over the left half of the chest the respiration is exaggerated; new moist râles at the base. The child has a low temperature (98°); pulse, 104; she is quiet, and free from anxiety. The easier position is sitting up in bed; bowels, regular; slight croupy cough; no expectoration; no friction sound.

March 12th.—It was decided to tap the chest with the aspirator, when 16 ounces of sero-pus were withdrawn; of alkaline reaction; microscopically, there were leucocytes, granular matter, fatty granules; it had a healthy smell. After the aspiration the child was able to lie down, and breathe easily. She slept well for some hours.

13th.—She seems quite comfortable, except that the respiration is hurried.

15th.—A permanent opening was made, from which there was a large escape of healthy pus, in the seventh intercostal space, mid-way between the spine and the sterum, with antiseptic precautions.

16th.—A metal tube was introduced to drain the upper part of the pleural cavity.

20th.—Going on well; eats and sleeps well; pus healthy; Listerism continued; a large drainage tube inserted.

24th.—Drainage thought not to be perfect; diarrhœa; temp. 99°, sweating; is losing flesh rapidly; has become restless; discharge slight but perfect; no pus escapes when the tube is withdrawn; chest easily syringed with tepid carbolic lotion 1-50.

27th.—After consultation a second opening was made in space below, and posterior to the former opening, and a tube put through from the one to the other so as to ensure thorough drainage; appetite improving; has lost much flesh. ℞. Mist. Cretæ, ʒij, 4tis. horis.

April 7th.—Much better; discharge slight, healthy; general retraction of the right side; breathing almost to extreme base; easily syringed with compound tincture of iodine, ʒss-Oj.

14th.—Tube withdrawn, the opening being large and the escape of fluid good; she is improving generally, and is making flesh; diarrhœa ceased; temp. 103°.

17th.—Going on well; sinuses closing up; each day they are opened afresh by passing in the probe; breathing heard down to the sinuses; temp. 102°.

18th.—Discharge is unable to escape; temp. 102°; is restless, cannot sleep, or take food freely; a double drainage tube was placed in one opening so as to make the drainage better.

19th.—Excision of 1¼ inch of lower rib bounding the opening was performed in the manner recommended by Mr. W. Thomas; evening temp. 104°·5; restless; takes milk freely; is exhausted; the hæmorrhage, though trifling, was much felt in her weak condition.

20th.—No better; has had a restless night; temp. 100°.

22nd.—She is gradually getting worse; dyspnœa increasing; patient much thinner; evening temp. 104°.

23rd.—She takes very little nourishment, and is gradually sinking; temp. 101°.

25th.—She died from gradual exhaustion.

Post-mortem.—A wound with granulating edges is situate in the right 7th intercostal space at posterior part of thorax marking the site of the resected rib. The lobes of the right lung were adherent to each other, and to the side of the chest. The inferior lobe was entirely collapsed, and about three ounces of stinking pus lay in the cavity of the right pleura; heart healthy; spleen slightly enlarged; kidneys healthy.

Case 2.—*Empyema—Excision of a portion of a Rib.* Charles Carter, æt. 15, was admitted Sept. 10th, 1880, under Dr. Heslop. He was in good health until five years ago, when he had "inflammation of lungs" and was confined to bed six months; there was no deformity of chest then; two years ago he was knocked down by a cart, the shaft striking him on the chest below left nipple; he did not take to his bed though he had a good deal of pain at the time, which has never left him; soon after this a "swelling" came over the portion of chest struck by shaft, which broke, and has discharged ever since; no deformity of the chest until after the "swelling" broke; discharge from chest persisted, but was diminishing towards time of admission.

Symptoms on Admission.—Heart's beat 2 inches below left nipple; two murmurs aortic and mitral systolic; *right lung*, sound; breath sounds increased; left side of chest, dull, both at the back and front; bronchial breathing behind; respiration very faint in front; slight purulent discharge oozing from a small sinus opening near the left nipple. The patient was in the course of a few days transferred to Mr. West, and on Sept. 22nd, it having been considered expedient to remove a portion of a rib, the patient was placed under ether, and a crucial incision was made by Mr. West over the 7th rib. The longitudinal portion of the incision was parallel to the rib; one small vessel was tied; the periosteum having been elevated from the rib by means of a raspatory, a piece of the 7th rib, nearly two inches long, with a small piece of the adjacent articular cartilage, was removed by means of cutting bone pliers. Directly the cavity of the chest was opened, one pint of greenish stinking pus was evacuated; the chest cavity was syringed out with carbolic lotion, 1-50, and a large drainage tube introduced. The wound was dressed with carbolic oiled lint and a tow pad. Two points of silver suture were used to draw the edges of the wound together. The pain after operation was very great. E.T. 98°; a morphia injection was ordered.

23rd.—Still in great pain; ordered a draught of Liq. Morphiæ Mur. m. 5 aq. ℥ ss. and to repeat the draught in the evening; temp. 100°.

24th.—Dressed; morn. temp. 98; chest syringed out with carbolic lotion 1-100; discharge much sweeter; even. temp. 99°; pulse, 126; resp. 38.

25th.—Dressed; comparatively free from pain and rapidly improving in health; to be dressed daily; temp. normal.

29th.—Chest syringed out with tr. iod. comp. ss-Oss, and a double drainage tube introduced.

Oct. 1st.—Allowed to get up; discharge much less.

6th.—The iodine injection for chest was increased to ʒj-Oss; temp. normal; appetite very good; feels much better than he did before operation.

10th.—Temp. normal; no pain; walks about wards; chest now syringed with lotio cupri sulph. gr.j-℥j; the strength of injection increased one grain day by day until it reached gr.10-℥j; discharge rapidly decreasing in quantity.

12th.—Patient slung in a canvas hammock, and a plaster case applied after Davy's method; a window cut in the case over the wound to allow of the chest wound being dressed.

20th.—Temp. normal; feels much benefit from the case; eats well.

24th.—Case cut down centre; relieved with lint and bandaged on.

28th.—Complains of pain in right side; no physical signs; hot fomentations to chest; plaster jacket removed.

29th.—Still in pain; ordered to keep his bed; linseed poultice with mustard to chest; evening temp. 100.°

30th.—Still complains of pain in the side; temp. normal; repeats poultice.

Dec. 3rd.—He was examined by Dr. Heslop, who ordered four leeches, ℞ pot. iod. gr. 3, tr. opii m. 4 aq. ℥ss, 4tis. horis, and hot fomentations. The patient has severe pain over the right costal arch, which is due to slight pericarditis. There was a friction sound and a double cardiac murmur (diastolic, aortic, and systolic mitral).

Dec. 6th.—Rather worse; friction sound more audible; he is more feeble; ordered 1oz. of brandy every six hours.

Remarks.—The first case here recorded teaches us how difficult and trying is the operative treatment of empyema, and shows how, in some cases, every procedure, in turn, may give us for a short time a promise of success, and then disappoint us altogether. Thus the first aspiration performed on March 12th, the formation of a large permanent aperture on March 15th, and of a second opening on the 27th March, so as to ensure thorough drainage, all tended to relieve the patient so that the temperature which had been 103½° went down to normal on April 1st, and kept so until April 10th. On that day it began to rise, and it kept on rising until April 19th, when it reached 104°; the time had then come, in my opinion, all other measures having failed, to try excision of a portion of a rib; whether the operation was done too late I cannot say, but, at any rate, no permanent amelioration of the symptoms followed the operation, and the child sank on the 25th, six days after its performance.

In my second case, which is still under treatment in the Queen's Hospital, there was no time lost in pursuing the other methods of treatment which are usually pursued in such cases. The disease had probably a traumatic origin; empyema had commenced two years previous to my first seeing him, and for a long time matter has been finding its way out of the chest by a small sinus near the left nipple. I did not wait to make a second opening into the chest, or attempt to evacuate its contents by drainage tubes and irrigation, but as early as possible resected a large piece of the 7th rib. The relief caused by the discharge of a pint of fetid pus, immediately after the chest cavity was opened, was considerable, and for two months the boy continued to improve, the purulent secretion diminishing day by day, and concomitantly the health and spirits returning. So much better was he that I asked Mr. Moore, my house surgeon, whose attention to the patient has been constant and unremitting, to put him on a Sayre's plaster jacket with a view of counteracting the tendency to lateral distortion of the spine which had begun to manifest itself. The case gave the patient comfort and support. Through a window in it, the wound in the chest was daily cleansed, the drainage tube was from time to time removed, and the whole of the space in the jacket which had been cleared away was packed closely with carbolised tow, and further supported and held in position by a broad bandage. Towards the end of November the temperature again began to rise and the patient to exhibit febrile symptons. The jacket was at once removed, but the pyrexia had not been in any way caused by that. Since its removal his condition has been very critical. The chest cavity still secretes pus, and the opening in it, though apparently patent, is not I fear large enough to ensure complete drainage of its contents. It seems that I am again to be doomed to disappointment in this my second case, but on reviewing it I have the satisfaction of believing I have done my best for my patient. I wish I could have done more for him, but I hardly know how I could have acted differently. The question that suggests itself to me is, that possibly it might have been better either to remove the periosteum with the rib, to take a larger portion of one rib, or perhaps an inch from two or three ribs, as was done in the following case.

A case of empyema was brought before the Clinical Society of London, in 1879, by Dr. F. Taylor, in which Mr. Howse made a T-shaped incision through the skin around the existing apertures (caused by thoracentesis), and after separating the periosteum, removing with the bone forceps portions of the 7th, 8th, and 9th ribs, each portion being about an inch long. This case has some analogy to Mr. Thomas's cases, but it was fatal in about four months, the death resulting from lardaceous disease of the liver, kidneys, and intestines.

It is noteworthy that at the *post-mortem* examination the three resected ribs were united by bony bridges, that the empyema still existed, reaching from the base to the apex of the chest, and that although there had been great falling in of the chest wall, the drainage had not been so much as was desired.

The authors of the paper suggest that in another case it would be desirable to remove the periosteal tissue much more freely, and also the thickened pleura.*

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* In a case of necrosis of the 5th rib, in which M. Roux removed with the chain-saw four inches, a collection of matter was formed between it and the pleura, not however communicating with the chest. Within a few days respiration became oppressed. Pleuritis came on and he died. On *post-mortem*, right chest found to contain a considerable quantity of purulent serum with albuminous flakes of recent formation. The lungs were filled with tubercles. Journal Hebdomadaire, Vol. 7. p. 299. Lancet, 1829-30, Vol. 2, p. 619.

I trust that in the future the operation of resection of one or more ribs may be less necessary, owing to the fact that tapping of the chest has been performed so early as to succeed in relieving pleuritic effusions, while they continue to be of a serous character. If thoracentesis be resorted to sufficiently early by means of the aspirator, pus will rarely be found to form. Should, however, such an unfortunate condition arise, prompt evacuation of the pus by a free opening, supplemented if necessary by a second opening, made like the first, with antiseptic precautions, will generally lead to a good result. Weak carbolic or iodine injections will prevent in most cases putrefaction of the retained pus, and the use of drainage tubes will favour the early removal of it.

That such a happy result is possible in cases where the pleura is full of pus, and even where there is a communication between the pleural collection and the bronchial tubes, is evidenced by the following case, in which recovery with expansion of the lung ultimately took place.

Thomas Luker, æt. 36, was admitted into the Queen's Hospital under Dr. Heslop, June 12th, 1879, with empyema of the left side. On June 23rd, I drew off 23oz. of pus with the aspirator, afterwards closing the opening with styptic colloid. Some relief of the symptoms followed, but the patient continued to expectorate large quantities of pus. I, therefore, on July 10th, made a free opening into the chest between the 6th and 7th ribs, and near the angle of the scapula, with antiseptic precautions, and then introduced a large gilt drainage tube. The wound was daily washed out with carbolic lotion 1 to 100, and dressed antiseptically until July 17th; the dressing was then done every 2nd or 3rd day, and on the 27th he was sent out of the hospital almost well; he rapidly gained flesh, and was in a few days convalescent.

I might cite many cases where early and prompt treatment by thoracentesis saved the patient, and avoided the necessity for resection of a rib, but I will content myself with mentioning one other case of a typical kind, where effusion into the chest was the result of septicæmia, and where there were concomitantly pyæmic abscesses in the wrist joint, on the scapula, and in the region of the buttocks.

Eliza Cheadle, æt. 24, was sent to me by Mr. Whitby, on March 1st, 1880, with pleuritic effusion in the right side, which had come on rapidly after a miscarriage at the fourth month, and with an abscess in the left wrist joint. The latter was at once opened antiseptically. The chest was aspirated on the 6th March, and a large quantity of sero-pus evacuated : on watching the constant elevation of the temperature, I feared that empyema might be going on, but the pyrexia was evidently due to a fresh formation of pus in the left buttock, which I opened antiseptically on the 13th inst. A fortnight subsequently another abscess formed in the left shoulder, and this also was opened with the same precautions, and like the rest soon healed up. The septicæmia which had resulted from the retention and decomposition of a clot in the uterus, now appeared to have spent itself, and from this time amendment took place. The patient left the hospital, cured, on April 12th. No further pleuritic trouble took place, the one aspiration performed early had the desired effect even in this very critical case, and there was no occasion for further operative interference in that quarter. The lung had fully expanded, and was restored to its normal condition of usefulness in the course of a few months.

The desideratum in the treatment of all cases of pleuritic effusion is to prevent compression of the lung.

This can only be effected by early withdrawal of the fluid, and the sooner the thoracentesis is performed the less probability will there be of the lung being bound to the spine by bands of fibrin, and the less risk of the formation of and renewed secretion of pus. If aspiration does not suffice, the sooner a large opening is made into the chest the better, as by no other means can we hope to save the lung from being permanently impaired.

Should these various measures all fail, then and *then only*, in my opinion, is resection of a rib called for. It is a *dernier ressort* of uncertain value, and much experience of it will yet be required before it can be regarded as an operation of accepted efficacy. The operation is in itself simple and easy of performance, but it fails because no matter how much bone be taken away, the aperture seems in a short time to become so small, owing possibly to a thickened state of the pleura, that a portion of pus always inevitably remains shut up in the chest cavity, and by its decomposition endangers the patient's life.

INAUGURAL ADDRESS,

DELIVERED AT THE OPENING OF THE BIRMINGHAM MEDICAL INSTITUTE,

By J. Risdon Bennett, M.D., LL.D., F.R S., President of the Royal College of Physicians of London.

Whilst sincerely acknowledging the compliment that you have paid me by inviting me to inaugurate your new Institute, I confess to some feeling of being guilty of misappropriating an honour. I cannot but think that had you been duly mindful of the maxim of rendering honour to whom honour is due, it should on this occasion have been conferred on one or other of your distinguished colleagues, who have been mainly instrumental in carrying out your laudable object.

Seeing, however, that your association originated in the wish to honour the memory of your late eminent and highly esteemed townsman, Dr. Geo. Fabian Evans, I felt that it would be a gratification to me publicly to express my concurrence in your estimate of his professional character and social worth, and in your desire that "Vita mortuorum in memoria vivorum posita sit."

When, also, I came to consider the way in which, keeping in view the generous purpose of your deceased friend, you have strenuously sought so to constitute your association as to make it most conducive to the general interests of our profession, I felt that the accident of my own position made it a duty as well as a privilege to accede to your request.

I congratulate you on the successful completion of your enterprise, the result, doubtless, of no little labour and self-sacrifice. I congratulate you on the evidence which it affords of a due appreciation of the means for promoting the best interests of our noble profession and of that harmonious action which augurs well for the maintenance of permanent concord and union.

Birmingham has acquired an enviable distinction by its patriotic spirit, its municipal enlightenment, and the generous efforts of its citizens to promote, not merely its commercial prosperity, but also the intellectual and moral advancement of the community. It was, therefore, only fitting that those of its inhabitants, to whom is committed the maintenance of health, the prevention and cure of disease, should associate themselves in combined public effort to advance the interests of that science with which the welfare of each citizen is indissolubly bound.

In the possession of noble hospitals, a medical school, and distinguished practitioners and teachers, you have means and appliances for the education of those who are entering our profession of which you may well be proud. You are abundantly supplied with facilities for securing that preliminary general education, which is now happily felt and acknowledged to be essential for the aspirants to our ranks. And after all our complaints and shortcomings, we have good reason to rejoice, and not be ashamed at the improvement that has taken place in the education of our members. But there is a higher education, both general and professional, that only begins when professional studies in the conventional sense have been completed. So long as we have to fulfil the daily duties of our calling, our professional studies in the highest sense are never completed. The peculiar nature of our daily avocations renders it indeed, for the most part, difficult to carry on satisfactorily these higher professional studies. The hindrances and obstacles are numerous and great. But we are unworthy our high calling if we seek not by every means to overcome such difficulties. For our efforts in this respect are of importance, not only to ourselves and our own interests, but also to the community at large. The welfare of every community is, and ever must be, to a great degree, dependent not only on medical science, viewed in its widest aspect, but also on the character of its disciples. In so far, therefore, as such an institution as this is calculated to promote the highest interests of medicine, you have a right to look for the generous help of the public. It is, indeed, only we ourselves who can duly appreciate the advantages which it is calculated to afford, to student or practitioner, whether seeking his own scientific advancement and that of his profession, or facilities for the daily discharge of his duties. Leaving out of consideration for the present any special mention of the various ways in which your institute is calculated to meet your more strictly professional acquirements, let me for a moment advert to the most prominent, and what appears originally to have been intended to be the *chief* feature of your institute—*its Library.*

Much has been said of late about the meaning of culture, in what it consists, and how it is to be attained. And I doubt not that many, if not most of my audience have been charmed by the eloquent words that have lately been addressed to you in another place, by a high authority on this subject. It behoves me, therefore, to stand in awe and measure my words. I am not, however, going to enter the lists as a champion for the pre-eminence of either science or literature. Indeed, I cannot admit that in our case, at least, there should be any antagonism between the two. Whatever influence science can exercise in promoting our culture, the nature of our studies necessarily imparts, and it is not difficult to prove that the culture of a medical practitioner cannot be complete without the aid of literature in its widest acceptation. Neither as citizens, claiming to take an equal position with any other class in the social scale, nor as physicians thoroughly furnished for the efficient discharge of our special duties, can we dispense with literary culture. In the service that we are called to render, we have to do with man in his whole nature, with mind as well as matter, and however far the science of physiology may eventually extend the realm of matter, force, and law, we cannot discharge our duties to society and in the sick room without availing ourselves of other resources than those which are comprised under such terms as matter and force. The moral management of our patient is ofttimes more essential to his recovery than any agent to be derived from the best furnished and most varied *materia medica*, and that not merely when we have to do with those cases which fall within the strict domain of the psychologist. The interaction of mind on body, and of body on mind, demands our consideration in no small number of the ordinary cases met with in daily practice, and that man must be at a great disadvantage in the management both of the patient and his friends, who has not made philosophy a part of his education, and literature a means of culture.

Nor can our social position, in the present day, be maintained without bestowing due care on general culture. We have advantages, I believe, for holding our own in the best and most cultivated society which no other profession possesses. Our studies have a less narrowing influence on the mind and comprise a wider range of topics of general interest and instruction than those of any other profession. In intellectual power we are not inferior. I altogether dissent from the notion that a doctor finds access to the best society more difficult than another man, merely because he is a doctor—provided his character, education, and culture are what they ought to be. Mr. Ruskin is reputed to have said, "fit yourself for the best society, and avoid it." If by this it is meant to be implied that there is much that is ensnaring and injurious to him who devotes much of his time to what is called society, the warning is certainly not less needed by us than by others. But it is not the less true that social culture has an ennobling and refining influence on ourselves, contributes greatly to our own comfort and happiness, to the charm and enjoyment of life, and renders us better fitted for the trying, harder, and wearing duties of our calling, and thus promotes our professional usefulness and success.

I might feel it necessary to apologise for offering you such apparently trite remarks and adopting such a strain, were it not that I have assumed that your Institute is established mainly for the younger members of our profession, who are coming after those whose experience has taught them all that I could venture to say with propriety on such topics. But is there not a need to remind the younger members of the importance of availing themselves of those opportunities for general culture which the first years of practice afford, and which become fewer and fewer as life advances? The time allotted for the curriculum of medical study is barely sufficient for those subjects which are required for securing a solid scientific basis for medical practice, and amid all the struggle and pressure occasioned by the onward progress of science the student has scarcely time for anything more than that occasional relaxation which is needful to enable him to keep up his efforts. A glance at the journals, or a magazine, or some popular light literature of the day, is all that he can give. He has no opportunity of acquiring even a superficial acquaintance with the solid standard literature, either professional or general, whether of ancient or modern times. On the other hand there are strong temptations to rest and be thankful as he leaves the portals of the registration office, congratulating himself that his name is at length inscribed in the roll of qualified practitioners. It is then, however, that he is best fitted to profit by devoting a portion of his leisure to philosophy and *belles-lettres*, to the history of his country and that of his own profession. He comes with a mind more or less prepared for the perusal of works demanding thoughtful study, for which he will be amply repaid throughout his future course,

Hitherto, he has been occupied principally in furnishing his mind with facts and the received opinions of others, storing his memory with these and seeking to hold them in readiness and available for examination purposes. He has now to exercise his own judgment, to form his own opinions, to obtain a comprehensive grasp for the purposes of life of all the knowledge acquired and opinions received on the authority of others. He has to determine his own rules of conduct and what each occasion demands. To attain this, the supreme end of all education, no time and effort will be thrown away. For this purpose a course of reading and study distinct from that with which he has hitherto been occupied will prove of the utmost advantage.

Dr. Oliver Wendell Holmes, in an address given on a similar occasion to this, at Boston, speaks of much of the literature of the day as coming to us "in its shirt sleeves" a very happy description, not only of the *material* undress form, in which books now often appear, but also of the crude superficial character of much of both the professional and general literature of the day. Now, without wishing to detract from the advantages afforded by periodical medical literature, it is to be regretted that so many persons are content with such reading as the weekly periodical contains. No doubt in medical as well as other journals there is much that is valuable and even of permanent value. Not a little of the best thought of the day finds utterance in periodical literature, so that it has been said, "journalism is the grave of genius," where some of its finest productions are buried and for ever lost.

Your library must inevitably be provided with the current literature of the day, and its perusal is necessary to keep us *au courant* with the advance of science. But as our own experience ripens, and in proportion as we are conversant with the records of the labours and experience of our predecessors, we find that a great deal that comes before us dressed in the fashion of the day, and jubilant as novelty, is by no means new, and a good deal more that is anything but true. Apart from all theoretical and speculative matters, new facts so called in medicine are not so easily tested as new facts in science.

Such is the fascination of science, and so powerful the influence exercised by its daily advances and discoveries, that we are constantly led to imagine that we have but to apply them to the explanation of morbid processes and therapeutic procedures, to make corresponding advances in our knowledge and treatment of disease. Every real advance in science is a real gain to us, and not to be underrated, because we do not immediately see its application to utilitarian purposes. The interval between a discovery and the time when it becomes available for use, is, however, often considerable, and this not infrequently because we need light in some other direction before we can see that which prior knowledge holds forth. I know not anything that better illustrates this than the much debated subject of alcohol. Scarcely anything has been more diligently investigated, more earnestly discussed. It is still the subject of the most recondite chemical enquiry, and one of the Royal Society's Medals has just been awarded to a distinguished French chemist, for his researches and discoveries in the field of alcoholic compounds. Numerous and important facts have been ascertained by the physiologist, relating to the action which it exerts on the various healthy functions of the body, on the digestion, the circulation, animal heat, the eliminating processes. The pathologist has demonstrated various morbid structural changes which he has traced to alcohol. But how little, comparatively, and how uncertain is the light which all these labours have shed on the dietetic and therapeutic uses of this potent agent, is proved by the differences of opinion entertained by practical physicians, as the result of individual experience of its employment. It is evident that we have yet to gain further light, both from physiology and pathology, before we can make available, as a trustworthy guide in practice, that which these sciences have already shed on this all important subject.

I might cite also others of our most valuable remedies, e.g., mercury and quinine, our employment of which is still based almost entirely on empirical data. Since the first introduction of quinine for the treatment of intermittent fevers, we have learnt much respecting the mode of employing it and its sphere of action; but nothing, either from physiology or pathology, as to the mode in which its therapeutic action is brought about, and we still use mercury, whether as a specific, purgative, or so-called alterative, guided solely by our experience. Should recent observations on the malarious disease of the Roman marshes prove correct, the therapeutic action of quinine may probably be due to its destructive action on the specific germs by which that disease is now said to be caused.

Medicine, as a practical profession, still is and ever must be based on observation and experience; and whilst it cannot be denied that both as a science and an art it has made immense progress and is daily conferring increased benefits on mankind, owing to the more accurate knowledge that we possess of the structure and functions of the human body, and the relation in which they stand to the constitution and laws of universal nature; it is remarkable how much of our knowledge both of the phenomena and treatment of disease is derived from the observation and experience of our ancestors, who had none of the scientific advantages that we possess. In many respects the direct advantages obtained from scientific progress have been less signally manifested in medicine proper than in surgery, where the improvement has been enormous, due not merely to sounder physiology and improved mechanical means, but also to the discoveries of science in the field of anæsthetics and antiseptics.

May not the value of the writings of our forefathers be in a measure due to the absence of periodical literature in their day? They had not the temptation that we have to rush into print before they had had time and opportunity for testing their facts and pondering over their experience. In nothing is the trustworthiness and value of their recorded experience better seen than in their *prognosis*. And how much does not correct prognosis imply? How few of us can expect to excel greatly in this which so much more impresses the public than accuracy of diagnosis,

> Till old experience doth attain,
> To something like prophetic strain?

I know that many share my conviction that reading by our profession in the present day, especially reading of old authors, is far too much neglected, notwithstanding that the mass of current literature would seem to shew that this is emphatically a book-making, and therefore, presumably, a reading age. If the actual knowledge available for present purposes to be derived from old authors were less than it really is, the assistance that they afford in enabling us to test new doctrines and weigh new facts is considerable. Many a profitable consultation may thus be held, and how much cautious advice obtained? How much sober calm thoughtfulness may be fostered, and the vanity and mischievousness of therapeutic systems demonstrated? How much may be learnt of the relation between the character and spread of disease, and the climatic and social conditions and habits of the time? How much that is calculated to counteract the evil tendency of a good deal of the *specialism* of the present day? How much to reprove the injurious meddlesomeness on the one hand, and the therapeutic nihilism on the other, of some of the practice of our time? How much in the culture and character of the men, as displayed in their writings, to explain the reputation that they acquired, and the social influence they exerted and which renders them worthy both of our admiration and imitation.

It is not then to one class alone of my audience that I venture to commend the having recourse to many of the old and half-forgotten authors whose works should, and doubtless will, have a place in your library. To know the best that has been said and thought by the cultivators of medicine, as well as by philosophers and poets, both in bygone times and in our own day, cannot but be desirable for most of us. Amid a good deal that may be wearisome in an old author, there may be found much that is amusing, suggestive, and useful, and often not a few nuggets and pearls.

If I am told that the hurry and strife of daily practice preclude the possibility of devoting time to those sources of pleasure and profit which literature affords, I reply that they are available when others are not, when at a distance from dissecting room, laboratory, and microscope.

Mason Good is reported to have made the greater part of his translation of the Book of Job whilst walking the streets of London, and visiting his dispensary patients. The learned Dr. Adams, of Banchory, studied his Hippocrates and Paulus Ægineta during his professional rides over the moors of Aberdeenshire, and my old friend and fellow student, Dr. Andrew Wood, makes his poetic versions of Horace and Schiller whilst driving in his carriage about the streets and suburbs of Edinburgh.

One of our profession, Dr. Askew, the friend of Mead, is said to have been the first, as a collector of books, who brought bibliomania into fashion. His house in Queen's Square was crammed full of books: the passages were full, and the very garrets overflowed. His greatest delight was to exhibit his treasures and rarities to the most distinguished *literati* of the day. Some of his books were of such rarity that he would not suffer them to be touched, but shewed them to his visitors through the glass cases of his cabinets, some times standing on a ladder and reading portions of his inestimable volumes.

Any such library as this, you do not, I apprehend, seek to collect, nor is it desirable that you should.

But a public professional library should contain, not only sets of the best periodicals, ordinary books of reference, and expensive illustrated works, but also a well selected number of old authors not likely to be much read, but needful occasionally for those who are engaged in historical or other special enquiries. Every man's private library must be more or less limited, selected in accordance with his own tastes and daily requirements, whilst care should be taken that a public library such as this should contain a good collection of standard works on collateral science and literature as well as strictly professional works.

A public library is for public utility, and can never confer all the benefits of a private collection, nor all the charms exerted on the mind of the scholar by his own books. It is not, therefore, surprising that every cultured man, however absorbed in practice, should delight in the luxury of a few well stored book shelves of his own. And, as it has been observed, books are not buried with their owners, you may hope to have your library increased by the collections of those who loved their companions too well to part with them during their life, but who will be glad that after their death they should be committed to your keeping as precious heirlooms of the family freehold.

I must not, however, forget that there are other features of your Institute besides its library. You desire that it shall advance professional knowledge by means of physiological and pathological laboratories and museums, by the delivery of lectures, and the establishment of prizes and rewards. On this last point I say nothing, believing that it is only by very careful consideration and judicious management that prizes and rewards in connection with such an institution can be made productive of much good, or even free from some serious objections.

It is needless to say that laboratories for conducting physiological and pathological investigations are essential requisites for the advancement of our knowledge, and equally needless to say that they cannot, except in very rare cases, form a part of our private establishments. It is true that they are generally to be found connected with our schools and hospitals. But to this connection, with hospitals at least, there are often serious objections, even if they could, so connected, be made available for the purposes of any number of private students. The busy practitioner often needs the help that a central place like this would afford him for his immediate purposes. It is desirable to have a particular secretion, or other matter, analysed. A surgeon has removed a tumour, and he wants a careful microscopic examination to be made. In these and many like cases it will often be of the greatest convenience to be able to have recourse to the appliances provided by an Institute like this. For the purpose of more extended investigations, the privacy and freedom from interruption and other advantages, will be more readily obtained here than in connection with the laboratories required for the educational purposes of the schools. There are also various subjects of public interest and importance which require the combined efforts of your members, and which can only be investigated by aid of such facilities as may here be afforded.

There are matters connected with sanitary science continually presenting themselves, the due investigation of which demands mutual consideration and co-operation on an uniform plan of observation and experiment. Meteorological and other climatic observations, daily records of all that relates to the prevalence and spread of disease, and to what Sydenham called the Epidemic Constitution, may be carried on in accordance with previous discussion and arrangement, in a way more likely to be fruitful than by the labour of independent observers, each following his own plan and making his own record, the particulars of which probably do not admit of comparison with those of his neighbours.

It is a common source of vain regret that, with the individual skill and sagacity of those who pass away from us, there is also lost the benefit of their extended experience. But need this be so to the extent that it is? If we cannot hope for systematic practical works from men at the close instead of at the beginning of life, might they not often leave us brief informal *resumés* of their life experience, which they might not choose to publish, but which might be deposited in the archives of such an institution as this, and prove valuable to their successors, practising in the same localities, among a population subject to the same morbific influences. Heberden's Commentaries was a posthumous work, that is still of intrinsic value, and which might serve as a model for such records as I have suggested. A series of such records would not only preserve a certain amount of the matured experience of those who have gone before, but would also constitute valuable materials for the medical history of the district, especially in connection with such contemporary meteorological and other data as might be collected by the Institute.

That your Institute will be made available for the ordinary purposes of a Medical Society, for the reading and discussion of papers on medical subjects it is needless to say; and I am sure that it is your desire that it should be a Mutual Improvement Society. If so, may I say that it seems to me desirable that the topics for discussion should be chiefly of a practical character. Therapeutical questions above all others are those which demand most attention from us in the present day, and *they*, more than all else, may be most advantageously discussed by a body of practitioners. Pathological specimens may be exhibited and described, the results of scientific enquiries may be communicated ; but practical questions of the day, and especially therapeutic questions, the results of each man's experience, his failures and success, the requirements of which he has been made conscious, the difficulties that he has encountered, the new phases in which disease has presented itself to him, the prevalent aspects of disease—all these are pre-eminently topics the mutual discussion of which is likely to be attended with most benefit. And by what means are mutual respect and good feeling, brotherly kindness and charity more likely to be fostered and maintained than by free and frank discussion of common difficulties and mutual efforts to overcome them ? A consciousness that we have the sympathy of others who share our difficulties and trials, that *they* are honestly striving for the same noble ends as we, that their efforts are strengthening ours, cannot but bind closer the bonds of brotherhood, whilst misunderstandings and jealousies evaporate, and are dissipated by the genial warmth of frequent social intercourse.

And strange indeed would it be, if we, who are daily observers of the uncertainty of life, of the sorrows and bereavements of others, hourly witnesses that " Mortalis nemo est, quem non attingat dolor morbusque," if we should be unmindful of the necessities of him who, stricken by disease, or calamity, drops out of our ranks, unable longer to fight the battle of life ; or be regardless of the sorrows of the widows and the cry of the orphans of those who, yesterday, were our companions in life's path, shared in our toils, and partook of our joys.

But you have not lost sight of such brotherly claims—of the most Godlike feature of our profession. Having made it one of the objects of your association to relieve the poor and necessitous members of the profession and their families, I am sure you will not fail to secure for those of your associates who may need them, such benefits as may be calculated to brighten the gloomy hours of sickness, and even to mitigate the pangs of parting, to hold out the hand of helpful kindness, and carry consolation to the exiles from the home where

> All within is dark as night;
> In the windows is no light;
> And no murmur at the door
> So frequent on its hinge before.

God speed, therefore, your enterprise in all its high aspirations and beneficent aims.

REPORTS OF CASES.

GENERAL HOSPITAL.

CASE OF MITRAL STENOSIS AND AORTIC INCOMPETENCY FROM RHEUMATIC ENDOCARDITIS. — *Under the care of Dr. Rickards.*—G. Egginton, æt. 21, a pearl-button turner, was an out-patient at the General Hospital, under the care of Dr. Saundby, who made the following notes of his case, Sep. 2nd, 1879:—He is a well-built man, face pale and anæmic. He has been sweating lately, and his joints have been painful at nights ; he complains of pain at his heart, palpitation, shortness of breath, and headache. His present illness is of three weeks' duration ; he had rheumatic fever two years ago. No other illness. The heart's apex beat is in the 6th intercostal space, 4½ inches from the middle line. A double murmur is heard, loudest at the apex ; occasionally a rough presystolic murmur is heard. Pulse 96, temperature 101·5, liver enlarged, urine contains a trace of albumen, sp. gr. 1020. Sep. 22nd, 1880, he was made an in-patient with similar but exaggerated symptoms, except that the temperature was normal. The heart was much enlarged, its apex beat being outside the vertical nipple line and 4½ inches below the nipple, its impulse was heaving. Over its apex was felt a thrill which seemed to be presystolic ; over the base two slight murmurs were heard, systolic and diastolic ; here the 2nd sound of the heart was scarcely audible ; over the pulmonary valves, though audible, it was abnormally faint. Over the apex was heard a roaring and long presystolic murmur, and also a faint double murmur, systolic and diastolic. The 1st sound of the heart was here very indistinct and the 2nd sound inaudible. The pulse was small, soft, of low tension, and as estimated by the finger was not resilient ; it averaged 120 per minute, respiration 36 ; the urine, as in September, 1879. The rheumatism improved under salicylate of soda, but he had two relapses. In the 2nd pericarditis came on; the legs and lungs became œdematous; he had pulmonary apoplexy, and died November 22nd.

Post Mortem.—All the serous cavities contained a considerable quantity of fluid; both surfaces of the pericardium were coated with lymph; all the chambers of the heart were greatly dilated, and their walls greatly hypertrophied, especially those on the left side; the valves on the right side were sound; the mitral valve was converted into a fibroid diaphragm, not permitting the little finger to be passed through it; the lining membrane of the left auricle was very thick and opaque; the aortic valves were soft, thickened, shrivelled, and deformed; the lungs were œdematous, and contained patches of pulmonary apoplexy; the liver was enlarged and nutmeggy; the kidneys congested.

The case is recorded as an instance of a complex lesion of the heart of by no means rare occurrence, it shows the modification of the signs of one lesion by the presence of another. The 2nd sound of the heart, so far from being accentuated from increased tension in the pulmonary artery from mitral stenosis, was diminished almost to suppression; the pulse felt to be anything but one of aortic regurgitation. The mitral valve was thought, during life, to be stenosed from the presystolic murmur, the apical thrill, together with the embarrassment of the pulmonary and systemic circulations; the aortic valve was held to be damaged from the diminution of the 2nd sound, the double basic murmur, and the hypertrophy of the left ventricle.

MEDICAL NEWS.

REPORTS OF SOCIETIES.

British Medical Association.
Birmingham and Midland Counties Branch.
Pathological Section.

Ordinary Meeting, October 29th, 1880.

Dr. Foster in the chair.

Mr. Furneaux Jordan exhibited a specimen of erectile cancer of the humerus, obtained from a middle aged man whose arm he had amputated at the shoulder joint. The microscopical appearances of the tumour were those of round celled sarcoma. The medulla of the bone at some distance from the growth was reddened, indicating the importance of removing the entire bone in these cases.

Mr. Bennett May expressed surprise at the absence of myeloid cells in a tumour occupying the medullary cavity; he suggested that the reddening of the medulla at some distance from the growth was due to Esmarch's bandage.

Mr. Bartleet remarked that removal of the entire bone was not a perfectly absolute rule, as in the case of a sarcoma in the lower third of the femur, it would be better to amputate through the shaft than at the hip joint.

Mr. Jordan, in reply, said the tumour had been examined by the house physician, who had not noted any myeloid cells; he did not think there was any sarcomatous growth in the reddened parts of the medulla.

Dr. Rickards showed the kidneys from a case of anuria, which lasted 20 days, and was followed by recovery, the flow of urine being preceded by the passage of a small calculus. Death occurred a year afterwards. The patient had been subject to attacks of gravel. During the anuria there were no symptoms of poisoning, he perspired profusely, vomited five or six times in the 24 hours, and towards the end his lower limbs became œdematous.

Dr. Simon asked whether the vomited matter or perspired fluid had been examined for urea.

Dr. Saundby pointed out that one kidney was atrophied, probably the result of irritation from a calculus which had lodged in its pelvis, while the other was in the condition of hydronephrosis with a dilated ureter, the obstructing calculus lying in the ureter.

Dr. Barling drew attention to the difference between cases of this kind and suppression of urine in acute Bright's disease.

Dr. Rickards in reply, said he had not tested the vomited matter or perspired fluid for urea. There was never any tumour to indicate a distended kidney.

Mr. Lawson Tait showed a complete cast of the uterus containing no embryo, derived from the uterus of a married woman, six weeks after connection, and which he described as an example of fruitless ovum, and compared with those casts of the uterus derived from the virgin uterus, a microscopical specimen from one being exhibited to show the glands of Montgomery.

Dr. Joy asked whether this pathological condition would explain the cases of spurious pregnancy observed at the Dublin Zoological Gardens, in the attempt to breed from a Zebra and a female ass.

Dr. Hickinbotham drew attention to the incomplete ova which form a more advanced stage of this condition.

Mr. Lawson Tait in reply said he had been much interested in the cases referred to by Dr. Joy, he considered them quite identical with those of pseudo-cyesis in women.

Dr. Joy showed a pig's heart, with a large sarcematous mass growing on the mitral valve. The pig had seemed in ordinary health till shortly before its death, when it suffered from dyspnœa.

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Dr. Foster pointed out that the tumour occupied the auricular surfaces of both curtains of the mitral valve, and very completely obstructed its opening ; the left auricle was dilated and hypertrophied. The absence of symptoms was probably due to the quiet life usually led by this species of animal.

Ordinary Meeting, Nov. 20th.

Dr. Foster in the chair.

Mr. Furneaux Jordan showed a boy, after an operation for restoration of the mouth, necessitated by the destruction of the lower lip from a burn. After suitable paring the angles of the upper lip were brought together and subsequently new angles were made by incision. Good union followed, and a good mouth was the result.

Dr. Bassett showed a drawing of a placenta, which was intimately adherent to the wall of the uterus, and was taken from a woman who has borne a large family, but has a weak heart and a defective circulation. During all her late pregnancies she has been more or less an invlaid. Dr. Bassett also referred to a case of *Porrigo decalvans* of three years standing, which had resisted all other treatment, but was cured by an ointment of chrysophanic acid (10 grains to the ounce), used at the suggestion of Mr. Jonathan Hutchinson.

Dr. Simon showed a brain with a gliomatous tumour occupying the 2nd left frontal convolution. During life there had been pain, and epileptiform attacks, with loss of memory, but no paralysis.

Dr. Mouillot referred to the soft state of the brain, which had been kept in Wickersheimer's fluid, and expressed the opinion that it was unsuitable for preserving nervous tissues.

Debate on the Clinical Results Obtained by the Listerian Method of Performing Operations and Dressing Wounds.

Mr. Lawson Tait opened the debate by drawing attention to the necessity of having clear ideas of the meaning of the terms which were to be employed in the discussion, for without that such debates were entirely profitless. Those terms which he should employ he should like clearly to define. The first was the word sepsis, which he took to mean some potent influence capable of being carried from one patient to another, nobody knowing how; producing certain symptoms of a not very constant character, but always indicated by pyrexia, nobody knowing why; capable however of being produced *de* *novo* without previous infection, and the results of which were now known as "septicæmia." This name had taken the place of several which had preceded it, owing merely to a change of position in the theory of the disease, and not one of the changes have added in the least to our knowledge of the condition.

The second term he would use was "antiseptic," and within that he would include any method by which the septic condition might be avoided. Thus antiseptic surgery was the aim of all practising the art long before the birth of Lister. Ambrose Paré taught its principles, and the greatest antiseptic surgeons of this century were Baron Larrey and Sir James Simpson, both of whom contended against the most fatal of septic conditions—the crowding and bad sanitary conditions of our hospitals.

The third term was that of "Listerism," which he confined to the introduction by Mr. Lister of a series of details in the performance of operations and the dressing of wounds which were all more or less known for about fifteen years. Here he was met by much difficulty, for after having had abundant opportunities of practically testing Mr. Lister's various forms of practice during the whole of that time, having followed his publications with the most ardent desire to benefit his patients by their adoption, he found that no sooner was a plan loudly proclaimed as infallible than it was declared incomplete and another was substituted, so that at present it was absolutely impossible to determine what Mr. Lister accepted and what he did not. This confusion was intensified by an address which Mr. Tait heard Mr. Lister give at Cambridge, in August last, in which Mr. Lister claimed as his antiseptic measures such a detail as the proper selection of cases for operation. In fact the desire of the address seemed to be to claim for Listerism anything which was successful, and to exclude anything which was not successful. It was, in fact, a close resemblance to the old school-boy joke, "Heads, I win ; tails, you lose ;" and the constant reply of the Listerian to his critic is, "You have failed because you have not sufficient faith, and your details are imperfect ;" but without any such details success of the most brilliant kind had attended Mr. Tait's abdominal operation, and to the argument of such facts the Listerians turned a deaf ear.

In a discussion upon this subject at the Royal Medico-Chirurgical Society, some months ago, Mr. Tait argued that upon such a purely physical question as this general impressions only had been brought forward, though surely, if Mr. Lister's claims could be substantiated, they were capable of a proof having mathematical exactitude. In such an enquiry, if a physical basis was to be used, it must be perfectly clear that the results of a special practice must be of more value than those of general work, because in such a practice only could such an amount and kind of material be obtained from the practice of the surgeons as to have any statistical value. From the practice of no general surgeon was it possible to obtain a sufficiently large number of cases of the same operation to be of any use whatever, and to lump together all the various operations which were done in a general hospital, and discuss the mortality from them, as Mr. Lister had done, was simple nonsense. Even when this was done, however, Mr. Lister's results were not as good as those obtained by surgeons who did not employ his methods, and the published results of Dr. Borland and Dr. McVail, of the Kilmarnock Infirmary, shewed that, without the Listerian details in amputations, these surgeons obtained better results than Mr. Lister did himself in King's College Hospital.

In Mr. Tait's own practice there were only two operations in which the Listerian details could be applied—removal of the breast and abdominal section. As cases of the removal of the breast rarely died—not a single fatal case having ever occurred in Mr. Tait's practice—mortality results did not reckon. But Mr. Tait found that in those cases in which he used the Listerian method, the uniform result was prolonged and profuse suppuration with greatly protracted recovery. On the contrary, when he used nothing whatever but the absorbent cotton wool, and never touched the wound with carbolic acid, prompt union by first intention was the certain consequence. His assistant, Mr. Raffles Harmar, was his authority for the following narrative. Mr. Harmar had charge of two cases of breast removal in the same week, and dressed them both. One was a patient of Mr. Tait's, where no Listerian details were employed, nothing having touched the wound but the absorbent cotton. This patient recovered without a drop of pus ever being visible in the wound. The other case was operated on by a much more experienced surgeon, and the most complete Listerism was observed throughout. The wound suppurated and became erysipelatous, and the patient was very ill ; the result, a prolonged and difficult recovery. In abdominal sections, the results obtained without Listerism in Mr. Tait's own practice, were superior to those obtained with it, and he had shown in his paper to the Royal Medico-Chirurgical Society, that the process of recovery was easier and less anxious, being free from fever and suppuration of the wounds. Of 85 cases of ovariotomy, which Mr. Tait had recently performed without Listerian precautions, only 3 had died, and all of these three deaths had occurred from conditions far removed from the suspicions of the septicæmia which Listerism was supposed to prevent, but which abundant evidence showed it did not, even in Mr. Lister's own practice. The first died of heart clot, symptoms of which began immediately after the operation, and was fatal in thirty hours. The second had a malignant tumour with enlarged glands in the pelvis, and obstruction of the left femoral vein. She was without a bad symptom on the morning of the third day, when she was attacked by a fit of coughing, and died before the nurse could cross the room to her. The third was an old lady, seventy-four years of age, who had granular kidneys, and who died comatose four hours after the operation, never having recovered consciousness from the bichloride of methylene.

Looking back on his experience of ovariotomy, performed with the Listerian details, he could call up at least two cases in which the fatal issue was due directly to Listerism, and he knew of a third instance. That experience went back as far as 1872, though some surgeons in London had been claiming credit for having adopted Listerism for the first time in ovariotomy in 1877.

In a recent paper on Listerism, published by Mr. J. F. West, that author claims Dr. Keith's experience as being in favour of ovariotomy, in a statement that without the Listerian details, Dr. Keith's mortality was 1 in 7, and with them 1 in 21. But such a method of statement was manifestly inaccurate, for it left out of count that most important of all factors in success, increasing experience. Taking Dr. Keith's consecutive series we find that they are as follows :—

First	term	22	%	mortality.
Second	„	16	„	„
Third	„	16	„	„
Fourth	„	12	„	„
Fifth	„	8	„	„

The factors of increasing success here are clearly the introduction of the intra-peritoneal method of dealing with the pedicle, and growing care and skill. Since Dr. Keith has used the Listerian details his success has not greatly increased beyond what it was in the last series given above—certainly not more than it might have been reasonably expected to do with his wider experience.

In Mr. Tait's own experience the Listerian details increased the fever after the operation, and the difficulty of recovery, and, therefore, added to the risks, and Dr. Bantock, of the Samaritan Hospital, had come to a precisely similar conclusion.

Mr. Bartleet remarked that he had no experience in antiseptic ovariotomy, but he could hardly conceive the possibility of any surgeon, who had employed antiseptics in the practice of general surgery, failing to be convinced, not only of their utility, but he would use a strong expression and say of their necessity. He had not come to the meeting fortified with statistics ; he disbelieved in hospital statistics. He was glad that the subject had been brought forward, for he felt convinced that the immense benefits of antiseptic surgery would be wrongly attributed in the future, so astounding were they, to some change in the constitution of our patients ; but no improvement in physicians' practice had been attributed to a change in type of disease.

He did not gainsay the immense improvement in the hygienic conditions of our hospitals, in the absence of crowding, the better drainage and ventilation, and the exclusion of sewer gas, nor yet the more skilful treatment of wounds, in the better dressing, the use of drainage tubes, of pressure and of immobilization ; but in his opinion none of these circumstances, nor yet all of them combined, served to account for the wondrous results obtained by the use of Listerian precautions in surgery.

Under Listerian precautions there was almost entire absence of surgical fever. This febrile condition seemed to have some connection with bacteria in the blood, and he knew that it had been stated that bacteria were found in aseptic discharges. He believed this statement rested on insufficient authority, but accepting it as true, might there not be bacteria and bacteria undistinguishable by the microscope, but distinguishable by the different train of circumstances their presence set going.

He might be charged with this being entirely theoretical, but he said that fortunately there did exist bacteria which presented objective differences to those usually met with —a condition of pus called blue pus was held to be due to the presence of bacteria, but there were bacteria in all pus in open wounds, in pus which did not present this blue colour.

Hence it was fair to argue that the bacteria in the blue pus were different, or set going different changes in their habitat, to those ordinarily seen. In the same way, quite recently, fœtid feet were found to be due not to the perspiration, which was inodorous, but to a particular bacterium, different from the bacterium found in all perspiration, at all events in the excessive fœtor which accompanied its existence, and which was called bacterium fœtidum.

Hence it was quite possible, that if the micro-organisms found in aseptic pus were bacteria and not micro-cocci as he believed, that they were bacteria different in kind, or differing widely in consequence from those found in ordinary pus. Time would not permit him to allude to the practical aspect of the question. But the successes attending the use of Listerian precautions, and more than that, the confidence engendered in the surgeon by the recurrence of these successes, were a strong argument in its favour. We now opened the large joints, made compound fractures, opened large abscesses, not only without danger, but without anticipation of danger. Mr. Bartleet briefly alluded to some of his own antiseptic cases, and also to a case of osteotomy, which he had lately seen under Mr. Thomas at the Children's Hospital, where that gentleman, for the relief of deformity, divided on the same day with the chisel, the femur and tibia in each leg—the operation not being followed by any appreciable rise of temperature.

Mr. Bartleet said it was possible that the principle of antiseptic surgery was all wrong, it might be physical instead of chemical in its action; it was possible that the practice might be capable of great simplification, he trusted it would be, but knowing what he did and feeling what he did, concerning its enormous benefits, he was bound at any cost of money or of trouble, to place its benefits at the service of his patients, whether public or private.

MR. WEST devoted himself to the practical side of the question; whether the principle were right or wrong, no such advance has been made as that gained by the method enunciated by Mr. Lister. The American paper, quoted by Mr. Tait, showed that there had been mistakes in medicine and surgery—these had been familiar to us all in all times. But there had been men who had been able to take up the other side of the question. The profession were much indebted to Mr. Tait, they had all the same object, to arrive at truth. Many of the men who had looked at antiseptics as a mere theoretical question had found that their objection was wrong. Billroth, of Vienna, and Ollier, of Lyons, who had formerly opposed it, had now taken it up, so also had Mr. Christopher Heath, and many others in this country. The way in which it had been taken up showed that there was good reason for it—that all the previous plans of treating wounds were not satisfactory. Had anyone shown a better way of treating them, or should they go back to any of the old plans? Were they inclined to go back to water-dressing, dry lint, permanganate of potash, glycerine, or the French way of charpie smeared with unguents? What were they to adopt? Amongst the more recent modes of dressing wounds, those which were the most entitled to consideration were the plan recommended by Mr. Jordan, the use of thymol with a sponge, and the carbolized pads of Mr. Gamgee. These gentlemen had the courage of their opinions, and advanced methods which had the advantage of being introduced by very competent men. He had tried both of them; he had the reported results in a case of amputation at the hip-joint, after Mr. Jordan's plan, with success—but there were difficulties attending the application of the thymol and sponge plan, which rendered it almost impossible to carry it out except in hospitals, as in a private house it was difficult to meet with a thoroughly competent nurse. He had also tried the carbolic pads; they might be very useful, and are useful in very slight and trivial wounds, but for amputations were not worthy of consideration. He produced the temperature charts of two cases of amputation of the thigh, both undertaken for chronic disease of the knee-joint in young women, respectively 16 and 18 years of age. The one was performed with Lister's precautions; she never had a temperature above 100°, and left the hospital cured at the end of three weeks. In the other case, the dressing was done after Mr. Gamgee's method, by Mr. Moore, house-surgeon of the Queen's Hospital. The operation took place on July 29th, and the patient was still in the hospital, three months after the operation, and had had during a good part of the time a temperature of 103° or 104°. In the way of treating wounds they were not all bound to range themselves on the one side or the other. Before Listerism, wounds were treated successfully. He did not think Mr. Tait's opinion was likely to be realised, after the discussion which took place on this subject in London, in December, 1879. He regretted when he himself read a paper on this subject, on December 13th, 1879, at the Midland Medical Society, there was no one there to oppose what he said, or to dispute the opinions advanced by him in opposition to those of Mr. Savory. The paper he (Mr. West) read on the subject was published in the St. Thomas's Hospital Reports for the year. He had shown the special cases in which Lister's method is most suitable, such as osteotomy of the femur, a case of which was now in the Queen's Hospital, under the care of Mr. Bennett May, treated antiseptically with the best results. Some of the best ovariotomists were entirely opposed to Mr. Tait. Mr. Wells and Mr. Thornton for instance. Mr. Thornton says: "I have not lost a single case since I began operating on the antiseptic sytem." He (Mr. West) had published many cases of joint resections. He had a bundle of reports with him which, if time permitted, he would read of wounds of joints and large abscesses, all treated antiseptically and with excellent results. Professor Sayre had stated in a letter that "he was indignant that no one condemned Mr. Savory's views at the time they were enunciated. In ten years Mr. Savory would regret to have delivered that address. The style of it, however, was so beautiful that the effect was magical." Mr. West concluded by pointing to the good results achieved and recorded by Professor Lister himself, Mr. MacNamara, Mr. MacCormac, and Mr. Spencer Wells, through antiseptic surgery.

MR. GAMGEE saw nothing to answer on the part of previous speakers. The opponents of the antiseptic system were offering no disparaging comparison. Mr. Tait's paper was very lucid and most instructive. For himself he had nothing to add, withdraw, or alter from the opinions he had expressed. He considered that Mr. Tait remained unanswered Facts had come to his knowledge which convinced him of the perfect accuracy with which Mr. Tait had interpreted the experience of Dr. Keith. At no very distant date they would find a very candid avowal from Dr. Keith that it was enthusiasm which led him to place so much reliance on the spray. Mr. Tait's experience was an experiment of the most important kind. Mr. West had stated that he had tried the carbolic pads. He (Mr. Gamgee) only spoke of absorbent pads as a means of surface drainage, and as a means of compression. If they excluded all those other means which were quite as important as drainage and pressure, he could only look on the criticism of the carbolic pads as a joke on the part of a colleague who had spoken so flatteringly of himself and others.

MR. WEST replied that he was quite serious as to the pads; they had no doubt been used by Mr. Moore scientifically.

MR. JORDAN was bound to reject most of the conclusions Mr. Tait had advanced that day. He would say with Mr. West, that if Listerism did not continue as a means of surgical dressing, other methods must be modifications of it. Many of its details might be altered, and it was possible that Listerism might be improved. He quite agreed with what Mr. Tait and Mr. West had said, that we must not place too much stress upon statistics—much depended upon the different ways in which men look at them, the different circumstances under which the work was done. He adduced some examples of what could be done in antiseptic surgery, which could not be done without it. Let them take a psoas abscess, opened without any precautions, and with a clean instrument—what followed ? Death from septic causes within a very short time. Under antiseptic precautions they could open a psoas abscess freely, and with great confidence. Such operations could not be done with ordinary cleanliness. If they were compelled to open the knee-joint under the spray, they could do it with great safety ; no amount of dressing would allow them to do this. Any one of them could open a joint, and keep it open as long as they liked ; that was a crucial example ; on no other system could they keep a joint open as long as they pleased. Certainly no sponge, pads, or any other method whatever would enable them to keep a large surface such as a joint open. This crucial example was worth more than any amount of statistics. Mr. Jordan suggested to Mr. Tait that all systems could not be right; if antiseptics did not succeed there had been a flaw somewhere. They believed that even if the system admitted of a flaw, it was more reliable than any other—it was at least equal to any other—even if they could not absolutely rely upon the precautions. Ovariotomy was not a fair test, it was a limited one. Mr. Lister had been at all times willing to listen to any disputant.

MR. B. MAY enquired what Mr. Tait would gain by the demolition of the elaborately contrived scheme of Listerism? It was rather hard that the attack should come from him, the inventor of the very best spray-producer known. His reason seemed to be that Listerism had really increased his mortality, that he had lost some of his cases through it. He had brought forward some cases, one in which sloughing of the abdominal wall took place ; surely he did not assign the antiseptic system as the cause. The deaths occurred from causes quite independent of the mode of dressing. Mr. Tait had endeavoured to prove too much in endeavouring to prove that antiseptics had increased his mortality. In Mr. Tait's hands the antiseptic dressing had had no influence on the mortality of his cases—he had arrived at the same results by other and better ways—by the gradual elimination of the sources of outside danger which Listerism seeks to prevent.

Among these were the perfect care and cleanliness which he adopted in his mode of dressing, the exclusion of every tainted source, a tainted visitor, for instance. These details rendered Listerism a work of superfluity. In abdominal section, the wound, left to itself, would heal by first intention. He (Mr. May) could just remember surgery as it was before the introduction of the Listerian mode of dressing, it was in a disastrous state. There was a marked difference in comparing the results of treatment of ordinary surgical cases now, to what they were then. He believed that Listerism acted in two ways—by excluding the accidental sources of infection, and by preventing decomposition of retained secretions. That it did modify the healing of wounds he was quite sure; but he believed that there were many cases in which it was worthless, as in bleeding of the stump after amputation. The real success of Listerism was due to its prevention of the decomposition of retained secretions, and if the same thing could be attained in other ways, preventing the secretions from being retained, equally good results would follow.

Mr. Chavasse said that he tried to practise strict Listerism. The great tests of wound-treatment were (1) the mode in which wounds heal, (2) the power of warding off accidental wound complications. How did wounds heal through Listerism? By a minimum of pain, less pain than he had seen in any other system; by little constitutional disturbance. Those who knew how to apply the dressings—the very few dressings required—could do it much quicker than by any other system. The great boon that Listerism had conferred upon Surgery was, the abolishing of blood-poisoning. When he first became acquainted with the General Hospital, about 1871, there was much septicæmia. In 1872 Listerism began to be followed in the wards. After 171 operations six deaths had occurred from septic poisoning, and three others from tetanus due to septicæmia. There was no death last year from septicæmia. At Edinburgh, the most crowded wards where those of the Professors of Clinical Surgery, yet only on one occasion did he ever see a case of blood-poisoning in an operation of Mr. Lister's, the wound had putrified and pyæmia followed. Let them look at the German hospitals. In 1877 he went to

Halle; the wards were very closely packed, death followed almost every case of major operations. They adopted Listerism, blood-poisoning was banished, and that staff could now vie with any English surgeons, or even Lister himself. Somebody has remarked that the present generation of surgeons are superior dressers. But to *Listerise* a wound thoroughly it at first takes a great deal of time, and the case subsequently requires more care. It was a system which had to be *learnt*, and could not be jumped into at once. It was irksome for hospital surgeons who have held their appointments until they have lost their enthusiasm to become students again to learn Listerism, they give the thing a trial, some little matter of detail is omitted, putrefaction occurs, and the thing is thrown up in disgust. He thought that the next generation of surgeons would be the superior antiseptic dressers. If by the superior hygienic arrangements of modern times a surgeon was able to obtain better results, well and good, but he hoped the results would not warp his views when surgeons on the antiseptic system could obtain as good results.

MR. LANGLEY BROWNE said that the time was come when the misleading term "germ theory" should be given up in favour of "germ law." Professor Tyndall had conclusively proved that you can let in any amount of air, without decomposition, provided germs are excluded.

DR. BARLING said his education commenced during the progress of Listerism, he had seen Mr. Callender's and Mr. Savory's practice, neither of whom proceeded antiseptically, also a partial Listerian method was observed in St. Bartholomew's Hospital. He was convinced of the utility of Listerism. It was difficult to prove Lister right or wrong in his germ theory. There was a *something* in the air which, coming in contact with wounds, upsets them. Suppuration had various causes—it might be due to septic causes, it might be due to some other irritant—a piece of bone, sloughing, and so on. Mr. Tait had said he had never seen an ovariotomy heal by first intention with Listerism. He (the speaker) had seen it in the General Hospital, Mr. Tait's successes were very great and very splendid ; he operated in an hospital second to none—in the country ; he took the most extreme precautions ; he kept away the unwelcome visitor ; his sponges and all that sort of thing were scrupulously clean. It was much more difficult in a general hospital to do all this. They had an old hospital—old hospitals were saturated with septic poison, there was something which hung to the place that had a bad influence upon wounds. Dr. Keith had gone to a new house since he adopted Listerism, a house not saturated with purulent deposits, with no bad drainage or smells, and had had good results there. Anyone who operated in a perfectly clean room would get nearly as good results as under Listerism.

MR. SOLOMON had had no experience of Listerism, but had watched the journals, and been present when Mr. Savory delivered his address at Cork, and the position he understood Mr. Savory to take was this ; that if all modern knowledge was brought to bear upon the treatment of wounds, if all the advantages which a hospital could attain were used, the statistics would compare favourably with those of Listerism. He also laid great stress upon the importance of drainage, making your wound in a certain direction, so that it should naturally drain. There were three things in which it appeared to him (Mr. Solomon) Listerism was a success :—(1.) In treatment of psoas abscess. (2.) In opening of large joints, and keeping them open ; (3.) and most important in a foul hospital, the result there being that you would reduce your mortality at once. He had visited the hospitals on the continent—they were very much crowded. An operation in La Charité, in Berlin, was certain to be followed by death ; but subjected to the Listerian method the mortality had at once been brought down. No plan of treatment could equal Listerism in these three things.

MR. MANBY said that within the last fortnight he had been in a Scotch hospital, and seen 15 compound fractures treated under the spray and Listerian precautions without any evil effect ; also 30 cases of osteotomy at Glasgow made under the spray, with the same result. Could it be possible such a sight could have been produced in the pre-Listerian days ? The experience he had had in Listerism was small ; he had only seen one case of suppuration under its use.

MR. HYDE, of Worcester, had tried other methods with a fair amount of success. He had now adopted antiseptic treatment properly; the results had been very satisfactory compared with any other kind of treatment; he should continue to carry out the system till some easier and better system was found. It was quite as easy as any other treatment he knew of, and he did not think it took up more time; he had looked over the charts of temperature: they were very rarely over 100°. The little extra trouble attending the change had been amply repaid by the increased comfort to the patient. In compound fracture no treatment could compare with the spray and carbolic acid.

DR. CARTER took the theoretical side of the question. He was listening a week or two ago ~~on~~ to two very interesting lectures by Dr. Dallinger, on some minute forms of animal life; the lecturer gave an interesting and detailed account of some observations which he had made on forms of animal life in decomposing fluid at various stages of decomposition. The forms varied according to the precise stage of decomposition. At the same stage the forms of animal life were constant, "Like produces like"—distinct forms of life. These experiments, at least, showed them that something depends on the medium in which the germs fall. One important factor in this matter was decomposition. Mr. Tait had pointed out and shown clearly that his success was mainly due to the fact that he now ties the pedicle, and leaves it in the abdomen, instead of using the clamp. In this case no death occurred, still there was no decomposition of animal matter. In the various stages through which this decomposing matter went, there was a precise point at which it became a favourable nidus for the formation and development of germs. By preventing the putrefactive effect with a solution of carbolic acid, the surface of the wound was thereby rendered unfavourable as a nidus, and decomposition was prevented.

In reply MR. TAIT said that nothing which had been said induced him to alter his position in the least. Everything went to show that there was such a want of accord between Mr. Lister's theory and his practice, as to prove that one or other of them was wrong. The germ theory Mr. Tait accepted, but not its application to surgical practice, for it was wholly inconsistent with minor facts. As he had now no experience of general surgery, he could say nothing adverse to the statements made of the experience of those who had spoken, and in answer to Mr. Furneaux Jordan's question as to whether, if he (Mr. Tait) had to have his leg amputated, he would or would not, have the Listerian details employed for the operation, he could only say that in such an event he would leave such a matter for the decision of the surgeon to whom he entrusted the operation. But if he had to discuss the performance of ovariotomy upon any one in whose life he had a stake, these details most assuredly would not be adopted. It might be, he was rather prepared to believe it was, that there was something special in abdominal surgery, though he could not share Mr. Jordan's supposition that the peritoneum was not specially liable to septic infection. The increased success in all operations, certainly in abdominal surgery, was due to the increased care enforced upon the operators, to the increased experience necessarily involved in the development of special practice, and to the great attention now paid to the hygiene of the sick.

MIDLAND MEDICAL SOCIETY.

SESSION 1880-81.

Annual General Meeting, Oct. 6th.

The reports of the Council and the treasurer were read and adopted; and it was resolved that they be entered on the minutes, and printed and circulated amongst the members.

The following gentlemen, having been previously nominated, were elected to the various offices:—President, Dr. Savage; treasurer, Mr. Harmar; secretaries, Messrs. John Garner and Henry Eales.

Council Vacancies.—Mr. W. Thomas (retiring president), Mr. F. Jordan, Mr. John Greene, Dr. James Johnston, and Mr. T. H. Bartleet.

It was resolved that 10 guineas be given as a donation to the Medical Institute, to be devoted to the purchase of books.

This meeting was held at the Medical Institute by invitation, pending negotiations for holding all meetings there instead of at the Queen's College.

The Inaugural Meeting was held at the Grand Hotel, on October 20th, when about 170 members and friends were present. Previous to the address, Professor Poynting showed some interesting physical experiments, including electrified water jets and the phoneidoscope. Several things of professional interest were exhibited by Messrs. Salt and Son, Mappins, Southall Bros. and Barclay, and R. Bailey; and an address was given by Dr. J. Matthews Duncan on the treatment of Puerperal Fever; and this was followed by a supper, at which about 60 remained to entertain Dr. Duncan.

Meeting, Nov. 3rd.

Mr. W. Thomas exhibited a calculus which he removed from the bladder of a child, æt. 3, by supra-pubic lithotomy, and which was transfixed by a pin which formed its nucleus.

Mr. Lawson Tait showed a hair-pin, with phosphatic calculi, removed by vaginal lithotomy, also a menstrual exfoliation—a membrane, the size and shape of the uterus by not containing any ovum or placenta; also a case of scirrhus of the breast, following eczema of the nipple.

Mr. Eales showed two cases of primary glaucoma, in which appearances of primary atrophy of the optic nerves were the only condition for some time recognisable, being followed later by cupping of the discs, and other evidences of glaucoma. One was a man, æt. 40, the other was a girl, æt. 11.

Mr. West read a paper on trephining for traumatic epilepsy.

Meeting, November 17th.

Mr. Chavasse showed microscopic sections of fibro-adenoma of the breast.

Mr. Thomas explained the action of an ingenious instrument (sent by Messrs. Salt) for removing foreign bodies from the œsophagus. A similar instrument for the urethra, and a fenestrated tongue depressor, were also sent by Salt and Son.

Dr. Hickinbotham read a paper on "Missed Labour."

Mr. Thomas read a paper on hare-lip.

THE OPENING OF THE MEDICAL INSTITUTE.—We are very pleased to be able to announce the opening of the new and beautiful home for the profession, which has been provided by the completion of the Medical Institute Building in Edmund street. This was formally opened by the Mayor (Alderman Chamberlain), at a meeting held in the library hall, on December 17th; the chair was occupied by the President of the Institute (Mr. D. W. Crompton), to whom the profession owes the largest debt of gratitude for help of all kinds and of the most substantial character, given in the most liberal manner throughout the undertaking; and an address was delivered by Dr. Risdon Bennett, President of the Royal College of Physicians, which we publish at length. After the meeting Dr. Bennett was entertained at dinner at the Grand Hotel—the Mayor, Mr. George Dixon, Mr. J. I. Collings, Dr. Bell Fletcher, and others were present; the chair was taken by the President, and the vice-chairs by Dr. Wade and Dr. Underhill, of West Bromwich, Vice-presidents of the Institute.

MEDICINE AND PATHOLOGY.

DIABETIC COMA AND ACETONÆMIA.—Von Jaksch has published (Prager Med. Wochensehr, 1880, No. 20 and 21), a case of diabetic coma in a boy aged 13, which came on three weeks after the first symptoms of the disease showed themselves: the boy died in four days with a vital temperature of 33·3° C. The *post mortem* examination showed great emaciation, atrophy of the pancreas, catarrhal pneumonia in both lungs, catarrh of the colon, and traces of cured typhoid fever. The blood examined during life showed *destruction of the red corpuscles, but no fat drops*. The urine gave the acetine reaction with perchloride of iron, and on acidulating with sulphuric acid grilded .this substance to ether. In a second case the pneumonia of acetonæmia occured in a lad, aged 16, as an acute condition. He awoke in the night screaming, and fell into convulsions, and lost consciousness. Two days after his face was red, his pupils dilated, slight convergent strabismus of the right eye, general hypertrophy.

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New Books, &c., Received.

1. The Rocky Mountain Medical Review, No. 1.—2. Annals of the Anatomical and Surgical Society, Vol. II., No. 9.—3. The Croonian Lectures on some points in the Pathology and Treatment of Typhoid Fever. By Wm. Cayley, M.D., F.R.C.P. London: J. & A. Churchill.—4. The Vaccination Question—Speech by Mr. P. A. Taylor.—5. Annual Sanitary Report of the Province of Assam for the year 1879.—6. On Chronic Accidental Poisoning. By Henry Barnes, M.D.—7. An Elementary Treatise on Function of Vision. By Dr. Giraud-Teulon. Illustrated by Lloyd Owen, F.R.C.S.I.—8. Surgical Enquiries. By Furneaux Jordan, F.R.C.S. London: J. & A. Churchill.—9. Observations on the Cæsarean Section, By Thomas Radford, M.D. London: J. & A. Churchill.—10. A Treatise on the Theory and Practice of Medicine. By J. S. Bristow, M.D., Lond. 3rd Edition. London: Smith, Elder & Co.—11. Lectures on the Surgical Disorders of the Urinary Organs. By Reginald Harrison, F.R.C.S. 2nd Edition—Considerably Enlarged. London: J. & A. Churchill. 1880.—12. Osteotomy. By William MacEwen, M.D. London: J. & A. Churchill.—13. On Mechanical Impairments of the Functions of the Crico-Arytænoid Articulation. By Felix Simon, M.D. Reprinted from the *Medical Times and Gazette.* London: Pardon & Son.—14. Consumption as a Contagious Disease. By D. H. Cullimore. London: Balliere & Co.—15. Reports on the Sanitary Condition of the Borough of Birkenhead for the year 1879. By Francis Vacher, Medical Officer of Health.—16. On some Substitutes for Alcohol in the Treatment of Fevers. By Francis Vacher, F.R.C.S., Edin. London: National Temperance Publication Depôt, 337, Strand, W.C.—17. American Journal of Insanity, Oct., 1880.—18. Short Sight in Relation to Education. By Priestley Smith. Birmingham and Leicester: The Midland Educational Company. 1880.—19. Relapse of Typhoid Fever. By J. Pearson Irvine, M.D. London: J. & A. Churchill.

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